



L.C.C. COTTAGES ON THE TOTTERDOWN ESTATE.

THE ARCHITECTURAL WORK OF THE LONDON COUNTY COUNCIL.

By W. E. RILEY [F.], R.B.A., M.Inst.C.E.

SUPERINTENDING ARCHITECT OF METROPOLITAN BUILDINGS AND ARCHITECT OF THE LONDON COUNTY COUNCIL.

Read before the Royal Institute of British Architects, Monday, 19th April 1909.

I WELCOME this opportunity of laying before the Institute some general view of what is comprised within the title given to this paper. Many people appear to think that an hour's talk on the various phases of working-class dwellings and the successful planning and construction of fire-brigade stations would constitute the backbone of all that need be said, but I feel confident that this audience will appreciate the inadequacy of such a limited view of the question.

At the London County Council there are thirteen main Committees which deal with constructional works, these main Committees being divided into 35 Sub-Committees for purposes of detail. I think it is manifestly impossible that in the time at my disposal I can deal adequately with all the ramifications of this part of the Council's operations, which range in scope from the construction of one of the largest generating stations ever erected in the British Isles, to a three-roomed cottage, or a structure of even less importance.

I will not therefore attempt to go through the details of the whole of the architectural work which has come within my experience during the ten years I have held office under the London County Council, but will indicate only the salient features of the more important items. As an instance of what I do not propose to deal with, I would refer to a large Inebriates' Home, in the consideration of which there was no precedent in the country to work upon. The building, moreover, had to be put up at short notice, and much careful thought had necessarily to be given to the development of the scheme. The settlement is a complete one, and as it is probable that very few architects will ever be called upon to deal professionally with such an

institution, I have preferred to invite your attention to the consideration of other questions of a more public character, and to confine my remarks to structural works, which may be grouped under the following heads:—

1. Housing of the Working Classes.
2. Electricity Buildings.
3. Special Educational Establishments.
4. Fire Brigade Stations.

I propose also to deal briefly with the subject so far as it concerns:—

5. Street Improvements, including the architectural treatment of building schemes connected therewith.

6. Bridges, &c.

Before going further I think it only fair to myself to say that, apart from the pressure of statutory duties, the expenditure of time and the constant strain involved in carrying on the extensive programme of work with which I am about to deal, have not left me sufficient leisure and energy to do as full justice to the subject as I should have wished, especially in view of the honour which has been accorded me of being invited to address the members of the Royal Institute of British Architects on this occasion.

HOUSING OF THE WORKING CLASSES.

Housing Schemes are framed under the Housing of the Working Classes Act 1890, with its amendments of 1894, 1900, and 1903, and are carried out under the three sub-heads Parts I. II. and III. of the principal Act.

Part I. of the Act deals with large clearance schemes which entail an obligation to rehouse the persons displaced. These schemes are carried out by the "local authority," which, for the County of London, is the London County Council. Part II. is the diminutive operation on the lines of Part I., and the Borough Councils as well as the County Councils are empowered to act. Part III. permits voluntary action on the part of all the local authorities, including the Borough and City Councils as well as the London County Council. The Local Government Board, under the amendment of the Act dated 1903, became the confirming authority for all operations under the Housing Acts. In addition to the Housing of the Working Classes Acts under which powers are prescribed, large displacements arise under special Acts of Parliament. These entail rehousing obligations based practically on the same procedure as under the Housing Acts.

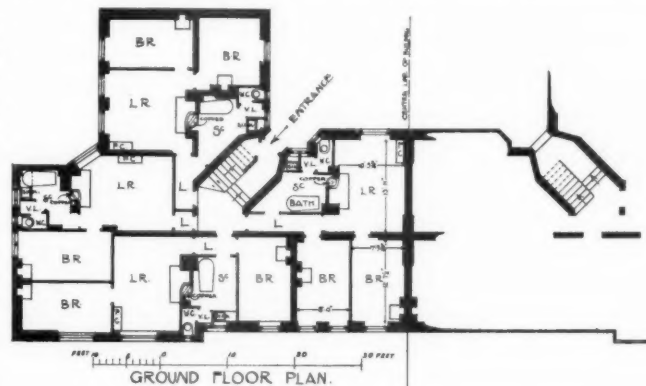
Prior to the passing of the Housing Act of 1890 the Metropolitan Board of Works had initiated and carried out clearance schemes which displaced over 21,000 persons, and they had provided accommodation in new dwellings for over 27,000. The cleared sites had been sold—earmarked for Working Class Dwellings—to Industrial Companies and private persons. The Board also had initiated other clearances displacing over 6,000 persons, but the completion of these schemes was carried out by the County Council.

The Council has initiated and carried out under Part I. clearance schemes displacing some 15,000 persons, and has provided, or proposed accommodation, for some 400 more than have been displaced. Under Part II. the County Council, moving by itself, or in co-operation with the Borough Councils, has displaced about 6,000 persons, and accommodation has been provided for about 5,000 of them. Seven thousand six hundred persons were displaced by the Metropolitan Board of Works under special Acts of Parliament, Improvement Schemes, &c., whilst 15,000 persons have been displaced by the County Council and accommodation for 16,000 has actually been provided.

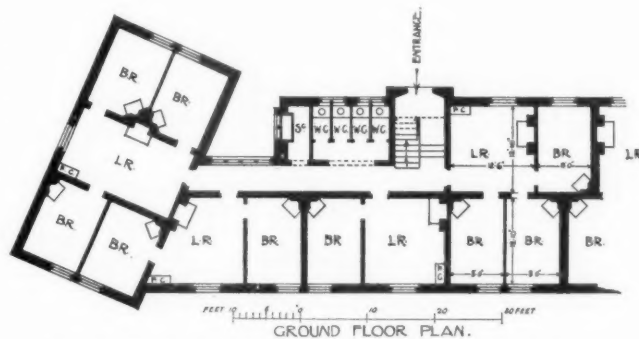
It has been laid down that not less than 400 cubic feet of air space per person for adults should be provided in the Council's dwellings, 200 cubic feet per head being permitted for children under ten years of age, and that the number of persons should not work out at more than two to a room. Infants born in a tenement do not count till they attain five years of age. It has been stated before a magistrate that a certain tenant living in an insanitary area, upon whom an ejection order had to be served, could not pay the rent asked by the Council. He had been paying 5s. 6d. per week, but would have had to pay 8s. 6d. per week for a tenement in the Council's dwellings suitable for the accommodation of his family. The point to be emphasised here is that the family was paying 2s. 3½d. for each hundred feet super under the old insanitary conditions, whereas the Council was in a position to rehouse them in a thoroughly sanitary manner without any charge on the rates at a little over 1s. 10½d. per hundred feet super. When this is understood it will perhaps afford an answer to the irresponsible criticism in regard to the rents charged for the Council's dwellings.

Examples of important schemes undertaken by the L.C.C. under Part I. of the Housing of the Working Classes Acts are :—Boundary Street, Bethnal Green ; Churchway, St. Pancras ; Webber Row, Southwark ; Wellington Place and King's Bench Walk, Southwark ; Union Buildings, Clerkenwell.

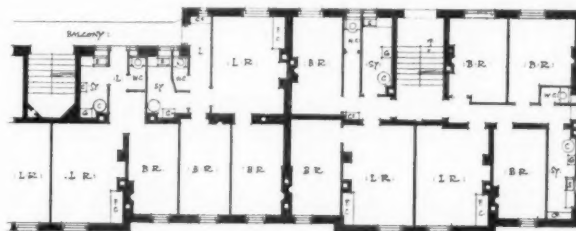
There are two generally accepted forms of construction adopted in the planning of block dwellings, viz. : (a) Self-contained tenements ; (b) Associated tenements.



L.C.C. DWELLINGS, SELF-CONTAINED TYPE : BEARCROFT BUILDINGS, FULHAM.



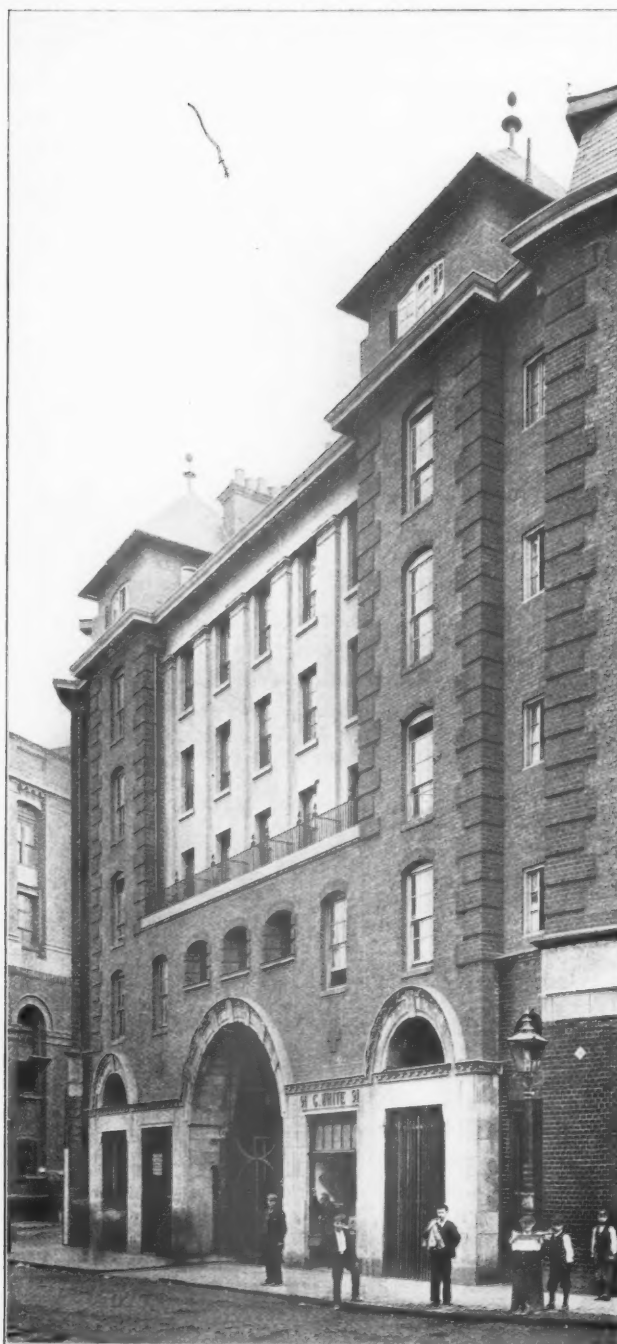
L.C.C. DWELLINGS : ASSOCIATED TYPE : SONNING BUILDINGS, BOUNDARY STREET.



FIRST FLOOR PLAN.



L.C.C. UNION BUILDINGS AREA : INTERNAL BLOCK.



BOURNE ESTATE: CORNER ELEVATION.

(a) The self-contained tenement has its own independent scullery and water-closet; and, except where a common laundry is provided, its own washing arrangements.

(b) The associated type shares with other tenements the sculleries for preparing food, sinks, water-closets, and wash-houses.

Latterly the L.C.C. has invariably adopted the so-called "self-contained" plan. A good example of a large scheme approaching completion is the Bourne Estate and Union Buildings. Bourne Estate consists of two parts. One part, viz., the Reid's Brewery section, is $3\frac{1}{2}$ acres in extent, and was acquired in connection with the Holborn-to-Strand Improvement and Southampton Row Widening schemes, which contained a clause stipulating that all persons displaced who had permanent employment in the district should be rehoused within a mile of their former dwellings. The other part, the Union Buildings section, was an insanitary area of $1\frac{1}{2}$ acres cleared under the Clerkenwell and Holborn Improvement Scheme, 1899, under which the obligation was to rehouse 1,414 persons displaced.

The Reid's Brewery scheme of rehousing was approved by the Secretary of State; and the late Lord Ritchie, then Home Secretary, made an interesting speech on the subject at a dinner given by the Chairman of the London County Council on 3rd December 1900, to the first Mayors of the newly constituted Metropolitan Borough Councils.

Referring to the general question of the housing of the working classes, and in particular to this estate, he said he had that day been engaged on the proposals of the London County Council, and that no more practical scheme had been presented to a department than that which had been formulated in these proposals. The accommodation is arranged as follows :—

			1 estate office.
			1 estate workshop and store.
			64 bicycle sheds.
			37 shops.
			31 tenements containing 1 room.
375	"	"	2 rooms.
263	"	"	3 "
94	"	"	4 "
1	"	"	5 "

the whole providing accommodation for 3,902 persons.

The average area of the living-rooms is 150 feet super, and that of the bedrooms 100 feet. The average cubic space in the living-rooms is 1,275 feet, and in the bedrooms 850 feet. Gas on the slot system is laid on by arrangement with the Gas Company. The buildings were planned for the internal blocks to lie north and south so as to obtain the maximum of sunlight in the living-rooms, and each tenement has at least one room looking on to a garden.

The type of plan designed for these buildings is an improved "balcony plan," arranged so that the living-rooms and the bedrooms do not look on to any of the balconies, and have an unobstructed light. The buildings are five stories high with a few attics, and are constructed of fire-resisting material with steel joists and concrete floors. All the sculleries and water-closets are separated from the habitable rooms by ventilated lobbies. The type of plan of the buildings has, since the completion of the first block, been adopted by other authorities for working-class dwellings, amongst others by the Metropolitan Boroughs of Bermondsey and Hackney. This type of plan has been adopted also for Darcy buildings, a small five-story block of dwellings erected for rehousing some of the persons displaced through the widening of Mare Street, Hackney. The site, though narrow, is an excellent one, as the building overlooks London Fields, a permanently secured open space. The dwellings will accommodate 190 persons in 25 tenements of two rooms and 15 tenements of three rooms. The total cost of the building including all incidentals amounted to £9,719. 11s.

Dwellings erected under Part II. are: Cranley Buildings, Holborn; Cobham Buildings and Borough Road Buildings, Southwark; Ann Street Dwellings, Poplar; Sylva Cottages, Deptford.

The obligations to rehouse when displacements have occurred in carrying out improvements have in some cases been discharged in connection with the housing required under clearance schemes. The cost of land is a serious handicap to housing operations, no matter which part of the Act prescribes the machinery. Briefly, the financial obligation entails the necessity of building dwellings which will recoup themselves in sixty years, paying sinking fund charges and interest of cost of buildings and of the land, which is written down in value as if it were earmarked for housing purposes. In the central districts of London it generally costs 15s. to 17s. per foot super to clear slums, but very few schemes can be made to pay if the charge for land alone is more than about 5s. per foot.

Bruce House—a lodging-house—at the corner of Kemble Street and Drury Lane, is an example of the fulfilment of part of the obligation to rehouse under the Holborn-to-Strand improvement. Bruce House contains 709 cubicles in all, affording accommodation for 698



DAIRYMAID BUILDING S. HACKNEY.



CALEDONIAN ROAD BUILDINGS: COURTYARD GARDEN.

lodgers (men) and eleven porters. It was opened in 1906, and cost, with the necessary machinery and apparatus for lighting, ventilation, &c., £50,020. The elevations are of red brick facings, relieved with glazed and Luton bricks, stonework, and roughcast, and the roofs are covered with green slates. The plan of the building is E-shaped above the ground floor, so arranged as to provide adequate light and air to the cubicles. Each lodger has an independent cubicle having a minimum width of 4 feet 10½ inches, with an area of 36 feet super, and lighted by a separate window.

Under Part III. of the Housing Act the operations are carried out on a purely commercial basis, and the cost of land is not written down. The plans and details of the dwellings are not subject to approval by Government Departments. Two fairly large Part III. estates on which block dwellings have been erected are the Caledonian Asylum Estate, Islington, and Wessex Buildings, Holloway.

Caledonian Estate is about two acres in extent, and, being acquired by the Council under Part III. of the Act, bears no rehousing obligation. The estate is therefore charged with the total capital expended in respect of land, buildings, gardens, &c., and all other outlay in connection with the development of the estate. After making due provision for all expenditure, including debt charges, the accounts show a profit of 1·15 per cent. on the gross rental. The buildings are five-story block dwellings containing 272 tenements, the four back blocks being of the improved balcony type. The front block has closed staircases with windows and white glazed tiled dado, giving approach at each landing to four tenements, averaging nine rooms for each set of four tenements. On the basis of two persons to the habitable room—six one-room tenements, 116 two-room, 146 three-room, and four four-room tenements accommodate 1,384 persons. The estimated cost of the buildings and incidentals was £57,396. 10s., and worked out at 7·86*d.* per cubic foot.

The most extensive developments under this part of the Act, however, have been the laying out of "Cottage" estates. Three large estates of this kind are in progress at the present time, while a fourth, the Old Oak Common Lane Estate, has been acquired, and a scheme for development is in progress.

Totterdown Fields Estate at Tooting comprises 38½ acres. The roads have all been formed and cottages have been erected on about 25½ acres.

Norbury Estate comprises about 30 acres. The roads have been formed on about 18 acres, and cottages erected on about 5 acres.

White Hart Lane Estate is divided into two parts. The larger or southern section comprises 178 acres; the roads have been formed on about 35½ acres and cottages erected on about 18·9 acres. The northern section comprises 46 acres and is not yet ripe for development. The Council has all along intended that this isolated portion should wait till the neighbourhood has opened up and become ready for building accommodation.

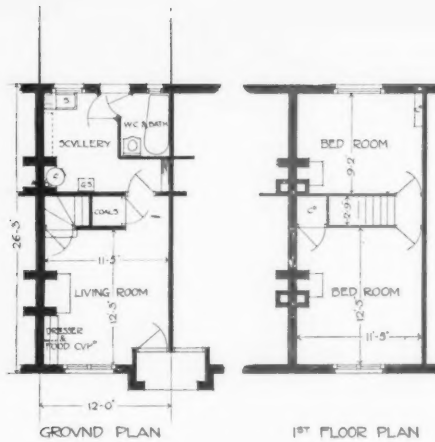
Endeavour has been made to render the cottage estates successful, both from a commercial and architectural point of view. Variety in planning and treatment of the elevations has been arrived at, as will be seen from illustrations of the plans and elevations.

I give a few typical designs illustrating three-, four-, and five-room cottages.

The cottages are two-story buildings arranged in short terraces with spaces at intervals, and they are almost invariably set back from the forecourt fence 5 to 14 feet. Each cottage has its own front door and its own plot of garden ground in rear. In every cottage suitable fittings are provided.

The scheme for development and designs produced have been largely influenced by the following considerations:—

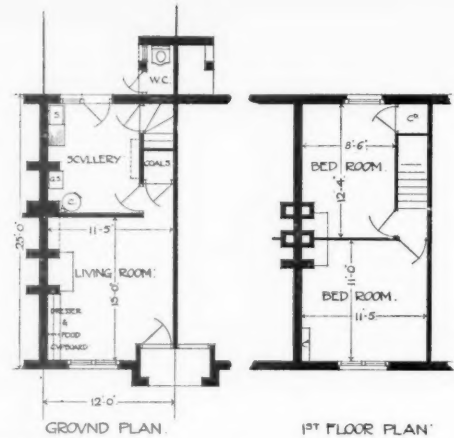
(1) Economy of land area and road construction in proportion to buildings. But in no



A.

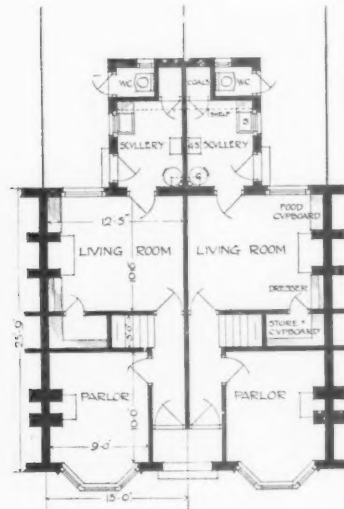
1ST FLOOR PLAN

TYPES OF THREE-ROOM COTTAGES.

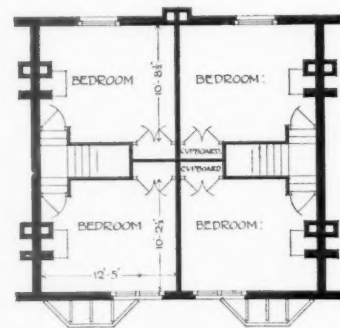


B.

1ST FLOOR PLAN

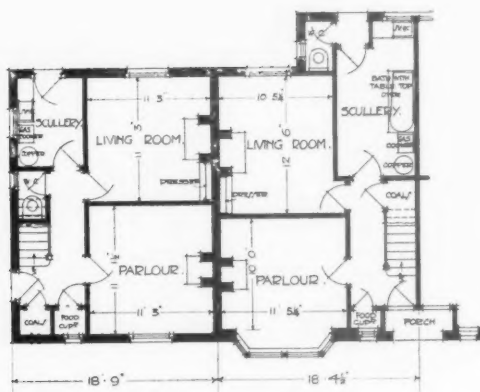


GROUND PLAN

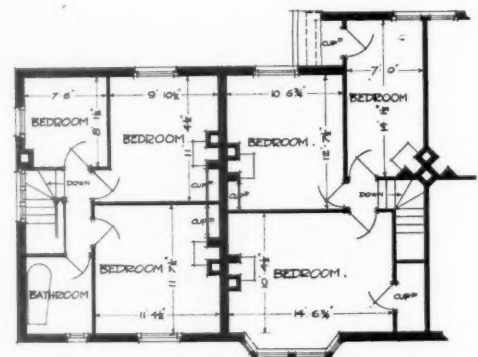


1ST FLOOR PLAN

FOUR-ROOM COTTAGES.



GROUND FLOOR PLAN.



FIRST FLOOR PLAN.

FIVE-ROOM COTTAGES.

L.C.C. COTTAGES: WHITE HART LANE ESTATE.

case have more than 33·33 cottages per acre been put on the land, the average number being about 29·14.

(2) The avoidance, as far as practicable, of deep external back projections in close juxtaposition, which, in my opinion, tend to cause insanitary pockets and prevent the free circulation of air currents along the backs of terraces of houses. I am sure we all view with horror the wholesale erection in close proximity to each other of these insanitary projections in the majority of suburban estates, and deplore the fact that so many estates are being developed on this, the pet plan of the speculative builder. It is a reproach that the law permits it.

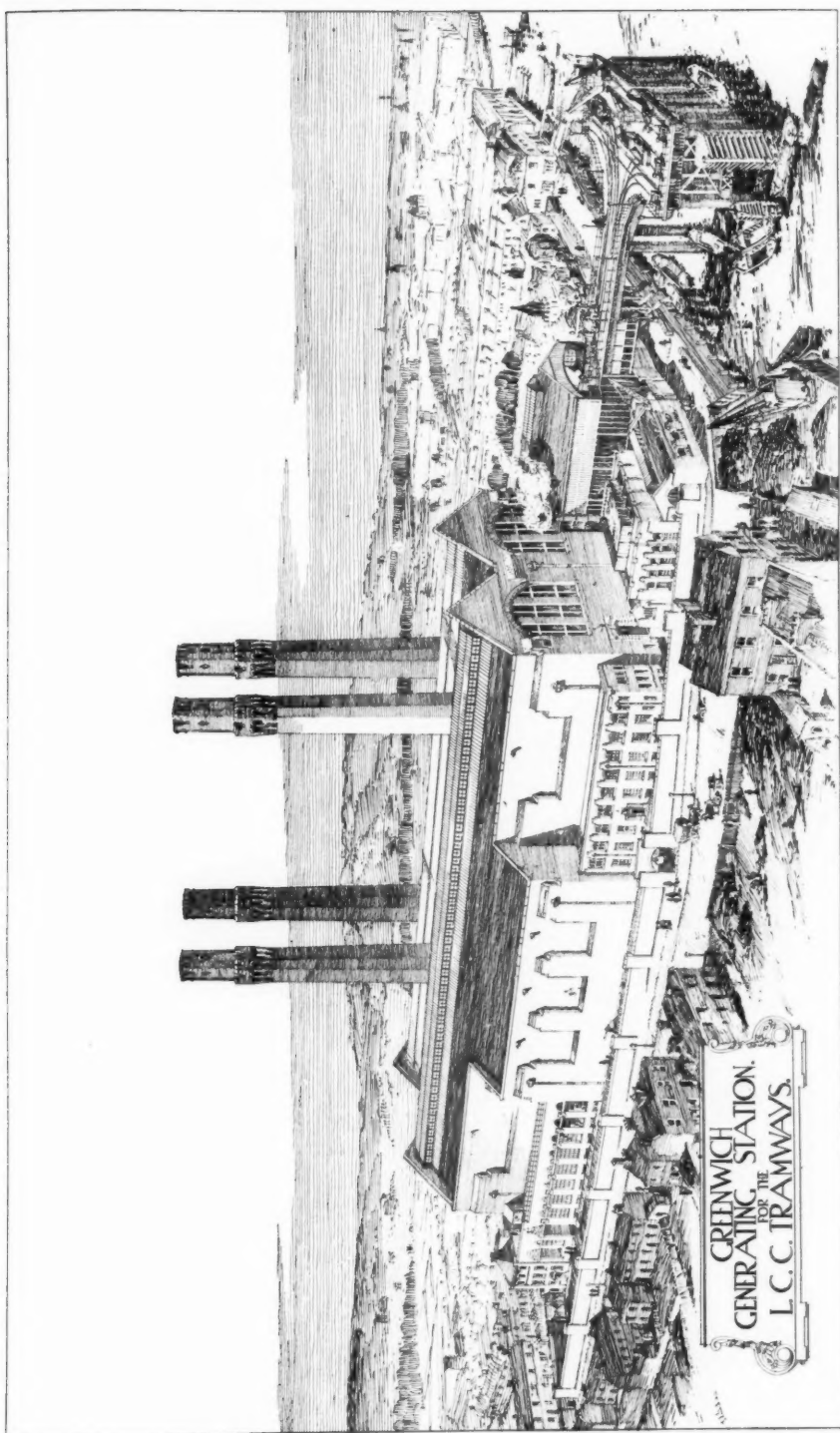
It may be of interest if I refer in very general terms to cost of construction, and the



TOTTENHAM ESTATE: COTTAGES.

methods employed of issuing particulars for tender and contract in regard to working-class dwellings, the expenditure on which has to be reduced to a minimum.

For large works plans are prepared in the usual manner, and specifications and bills of quantities are also prepared. Sometimes "open," sometimes "selected," tenders are invited. The cost of block dwellings, including professional and incidental charges, erected during the past five years, has worked out at about an average of £86 per room, or 9·8d. per cubic foot. For cottages, however, it has been found generally most economical to obtain tenders as follows:—The working drawings of the buildings are prepared to $\frac{1}{8}$ -inch scale, and a few essential details to a larger scale. A simple specification is prepared giving very little detailed description of construction, but specifying the quality of the articles required. To the specification are attached the Council's Instructions for Tender, Form of Contract, and Schedule as to rates of wages and hours of labour. No bills of quantities are prepared, but each contractor



SHOWING STATION AND CHIMNEYS AS ORIGINALLY DESIGNED.

have a storage of 13,000 tons. There are two bucket conveyors each dealing with 40 tons per hour. On their return journey they pass under the boiler house and convey the ashes to a large storage hopper beneath the pier, ready to discharge into barges. The average consumption of coal when the station is in full work will be about 500 tons daily.

The engine-house is built parallel to the boiler-house. The dimensions are 455 feet 9 inches long, 83 feet 6 inches wide, with an average height of 103 feet. The floors of the engine-room and of the galleries, which provide access to the steam-valves, are constructed of coke-breeze concrete covered with terrazzo paving. The internal wall-facings are of glazed brick. The gantry to carry a 50-ton travelling-crane is supported by steel stanchions which also carry the roof-principals. The four engines in the first portion of the station are of reciprocating type, with alternators, each of 3,500 k.w. capacity. The second portion is being fitted with four sets of 5,000 k.w. three-phase turbo-generators. The pump-house, for bringing the condensing water from the river, is situated between the engine-house and the river, and consists of a strainer-house, pump-house proper, and valve-house.

The roof framing of the pump-house is of steel, with brick arches. These are covered with concrete, on which asphalt is laid, forming a flat to carry a 50,000-gallon tank, which provides water for the boilers.

The offices are built on the east side of the engine-house, and communicate with the switchboard galleries. The sub-station and workshop are situated south of the switchboard galleries, and flanking the second portion of the engine-house. Mess-rooms and lavatories for each working section of the staff have been provided in positions convenient to where the employees are engaged.

The chimney-shafts are octagonal. The first pair were built to the full height of 250 feet above the boiler-house floor-level, but during the construction of the second pair it was discovered by the Astronomer-Royal that their height and the emission of hot gases would interfere with the observations at the Greenwich Observatory. It has been necessary, therefore, to finish these two chimneys off at a height of 182.12 feet above boiler-house floor-level. At the time the Admiralty's request to limit the height of the southern chimneys was being considered by the Council, a remark was made in the House of Lords to the effect that the Council's architect, who had been in the service of the Admiralty as Assistant-Director of Works, was responsible for the generating station being placed in that position. But the position of the station was clearly set out in the schedules attached to the London County Council's (Tramway and Improvement) Act 1902, which was before Parliament in that year, and no objection was raised to the position at that time. Moreover, the Committee were not advised by me in the selection of the site. When, however, the facts were explained, a generous apology was given in the issue of *The Times* of the 27th June 1906.

The materials selected are stock-bricks, with Portland stone for cills, copings, and dressings. The roof is covered with Bangor slating and patent glazing. The total cube of the building is 9,670,000 cubic feet.

The engineering disposition of the parts of this gigantic building, together with the entire equipment of the machinery, etc., is the work of my colleague Mr. J. H. Rider, the Council's electrical engineer, who was also mainly responsible for changing the site of the building from Cumberwell to Greenwich, where facilities for water-borne fuel were secured.

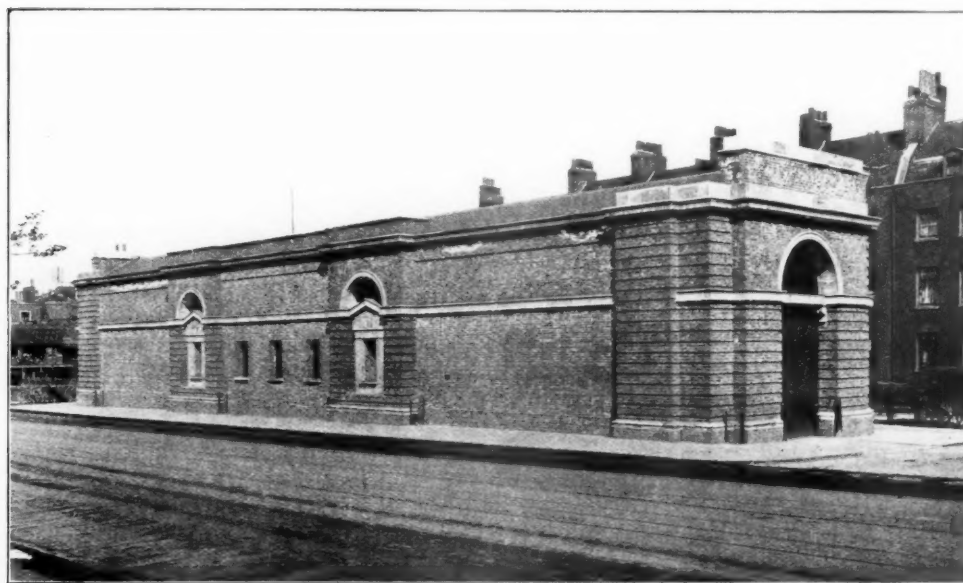
THE NEW CROSS CAR SHED.

This car shed, on the south side of New Cross Road, covers nearly four acres, and accommodates 295 double truck cars. To obtain a level working floor it was necessary to form an average gradient of 1 in 27 from the New Cross Road and to excavate the back portion of the

site to a depth of 14 feet. The plan is roughly a square, and nine bays of roofing run north and south, the standard span being 43 feet 3 inches between centres of stanchions. The westernmost bay is arranged as workshop and paint shop. Generally the walls are of yellow stock brickwork, with a dado of salt-glazed bricks 5 feet 6 inches high to resist grease. The stanchions, roof-trusses, and girders are of mild steel, the total weight of steelwork being about 1,700 tons. The roofs are covered with blue Bangor slating and patent glazing. The elevation to the entrance is of Portland stone. The building cost about £87,000.

SUB-STATIONS.

The sub-stations have been designed to accommodate the switch gear controlling the various sections and the 500 k.w. generators, which transform the high-tension current received from Greenwich to a direct current of a working pressure of 550 volts.



ISLINGTON SUB-STATION.

There are two types of these buildings, the earlier being those with basements in which the high-tension switch gear was placed, the sub-station at Islington being an example. The interior of the machine-room is lined with ivory-glazed bricks with a salt-glazed brick dado, the floor being of steel and coke-breeze concrete covered with terrazzo. A gantry is constructed to carry the 10-ton travelling crane. The switchboard platform extends practically the full length of the building, and a mess-room adjacent to the switchboard is provided for the attendants, with a workshop for small repairs. The exterior of the building is in picked stocks and Portland stone dressings. The roof is covered with Bangor slates and patent glazing.

The Forest Hill sub-station is an example of the new type without a basement, the high-tension switch gear being placed on a gallery above the switchboard platform, otherwise the

arrangement of plan is the same. The materials used in the construction are similar to those at Islington.

The next division of our subject relates to

EDUCATIONAL INSTITUTIONS, INCLUDING TECHNICAL SCHOOLS.

The special educational establishments which have recently been created are:—The Central School of Arts and Crafts and the London Day Training College in Southampton Row; the School of Engineering and Navigation at Poplar; the Westminster School of Art and Technical Institute; the School of Arts and Crafts at Hammersmith; and other Technical Schools at Shoreditch, Paddington, and Brixton.

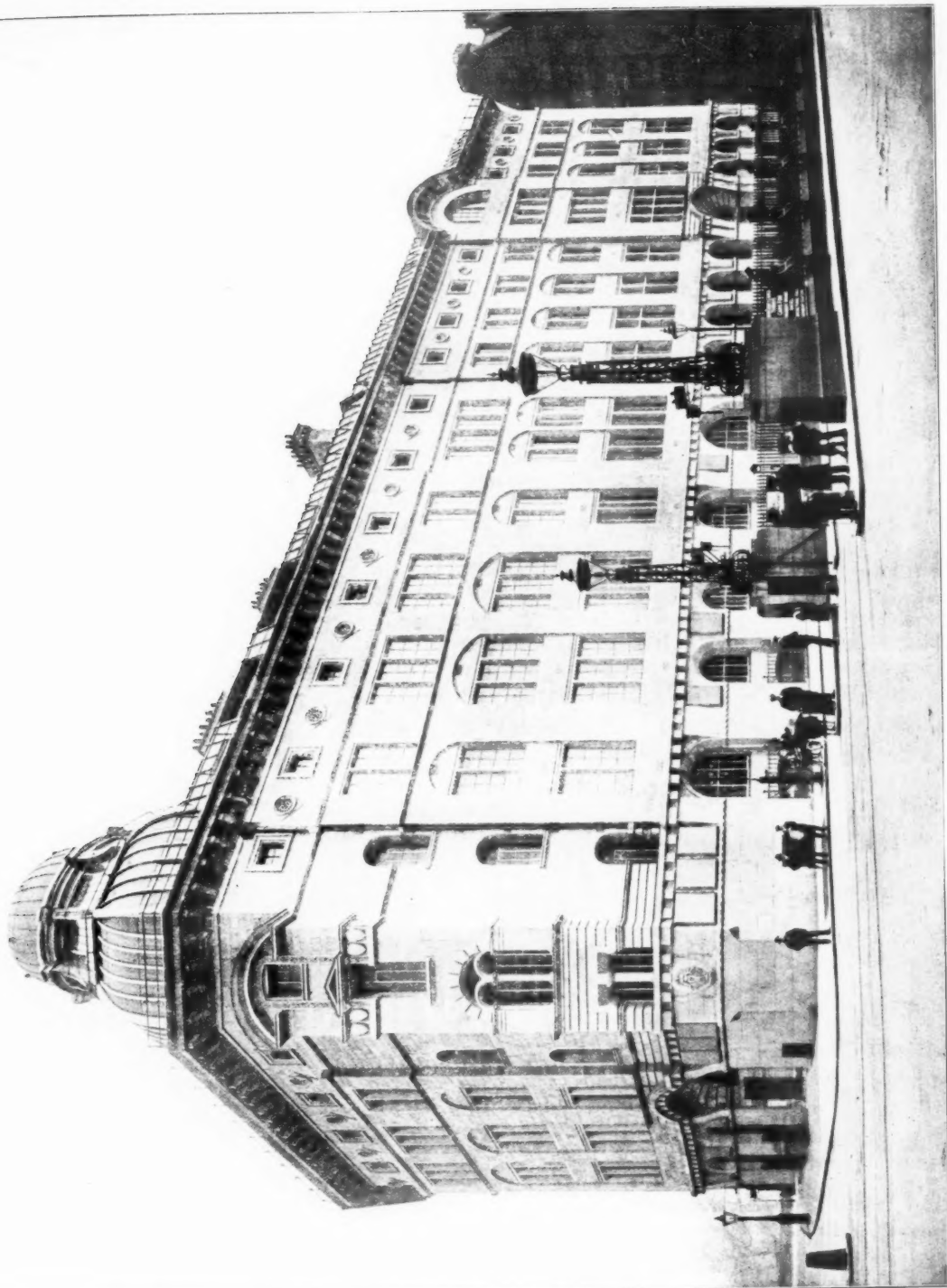
THE CENTRAL SCHOOL OF ARTS AND CRAFTS AND THE LONDON DAY TRAINING COLLEGE.

The School premises extend 107 feet along the Southampton Row frontage; the Training College occupies the remaining 110 feet. The buildings were placed in contiguity, so that economy might be effected by the common use of rooms by the students of both School and College, and by avoiding the reduplication of heating apparatus, plant, &c. Incidentally the combination of the two buildings under one roof lends itself to breadth of treatment. The College is for the professional training, in teaching, of students who are receiving their academic education in the University of London at King's, Bedford, and other Colleges. The School building has a basement and five other floors, and an endeavour has been made to classify as far as possible the various trades, and to devote a whole floor to each of the main groups. The principal drawing and modelling studios are on the fourth floor, and are carried up through the fifth floor to the roof, and are top-lighted.

The College building has seven stories, including the basement and entresols. To the lower have been allocated those rooms in which a large number of persons will congregate; to the uppermost, which is partly in the roof, the top-lighted art-rooms and laboratories; and to the intermediate stories the general class-rooms. In the basement, as being of little value for class-rooms, is placed the gymnasium, with dressing-rooms and shower-baths; cloakroom accommodation for men; storage for cycles; quarters for the resident caretaker; and the coal stores. A controlling factor of the lower portion of the building was the Lecture Theatre, which it was necessary to place so as to be convenient of access from the adjoining Central School. This theatre, which is seated for 300, is situated on the ground floor, the remainder of which is occupied by the entrance hall and staircase and the upper part of the gymnasium.

The greater part of the first floor is occupied by two very large rooms which are used as common rooms for the students and occasionally for examinations. Adjoining these are the luncheon room and buffet; the kitchen is on the top floor. The height of the general class rooms is about 12 feet, of the common rooms 16 feet, and of the gymnasium, art rooms and laboratories 20 feet. Steel casements have been used throughout, those on the upper floors arranged so as to be easily cleaned from inside the building, and the rooms facing Southampton Row have double windows. The height of both School and College from the street to the cornice is 75 feet 6 inches. Above this the roof, which is covered with lead, rises to a further height of 12 feet. The façades generally are faced with Portland stone, the lower part to 12 feet 6 inches above the street with granite from the Colcerrow Quarries in Cornwall.

Dressings of Hopton Wood stone have been used in the halls and staircases and in the exhibition hall. The construction throughout is fire-resisting, and provision is made for



LONDON COUNTY COUNCIL TECHNICAL COLLEGE, SOUTHAMPTON ROW, W.C. (W. E. HILEY, ARCHITECT.)
(Reproduced from an illustration in *The Builder*, 16th May 1908.)

alternative means of escape in case of fire. The ventilation is on a simple extract system, fresh air being admitted through ventilating radiators.

The cost of the two buildings, exclusive of equipment, is estimated at approximately £115,000.

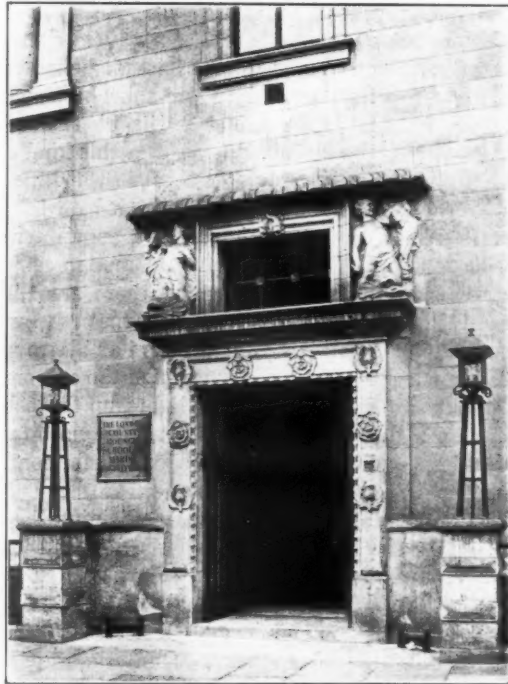
THE SCHOOL OF ENGINEERING AND NAVIGATION AT POPLAR.

This building was designed primarily to give instruction in marine engineering, naval architecture, and other kindred subjects. It cost approximately £27,000, exclusive of machinery equipment. The main front is faced with Portland stone; other walls have stock-brick facing. The columns in the entrance hall are of Hopton Wood stone. The roof is covered with green Cumberland slates. The casements throughout are of steel. The fittings and equipment were designed and constructed with the rest of the building. Owing to the subsoil at the back part of the site being waterlogged to within a few feet of the surface, considerable difficulty was experienced in the foundation works. The back wall of the buildings is built on steel girders resting on cast-iron cylinders sunk to a gravel stratum, which is about 18 feet below the ground floor. The cylinders were heavily weighted, the core excavated by divers and the cylinders filled with concrete carefully deposited.

THE WESTMINSTER SCHOOL OF ART AND TECHNICAL INSTITUTE.

This building is somewhat typical of the Institutes. It had to be designed, however, as an addition to the existing School of Art, erected by the late Baroness Burdett-Coutts, and recently taken over by the Council. The studios for painting from the life are on the top floor and are north lighted. The heavy and noisy crafts have been kept on the ground floor of the blocks. The sanitary offices are arranged on mezzanine floors, and are isolated from the class-rooms by cross ventilated corridors. The administrative rooms are adjacent to the entrance. Two staircases provide alternative means of escape in case of fire. The construction is fire-resisting throughout.

The class-rooms are about 14 feet high; the corridors are ceiled about 10 feet up, and the space above utilised for the pipe mains, electric-light leads, and ventilation ducts. Casements are of steel, arranged so that the windows can be cleaned from inside the building. Ventilation is by a simple extract system, with electric fans at roof level operating through metal ducts, fresh air being admitted through ventilating radiators. The heating is by low-pressure hot water. The corridors are paved with hard red tiles, the class-rooms with pitch-pine blocks. The joinery generally is yellow fir, painted; the smoke doors and staircases are of oak in no



PRINCIPAL DOORWAY, SCHOOL OF MARINE ENGINEERING, POPLAR.
Sculpture by Mr. Bertram Pegram.

place less than 2 inches thick. The class-room walls are plastered: those of the workshops are fair-faced with gault brick. The lower part of the façade is of Portland stone, the upper of stock brick, with Portland stone window jambs and heads, cornice, and quoins. The forecourt railings and gates are wrought iron. The buildings cost £21,000.

FIRE BRIGADE STATIONS.

In planning modern fire brigade stations there are two essentials—the provision of adequate accommodation for the necessary apparatus, and the housing of the men in such a way that they may be able at any time to reach the positions assigned to them as quickly as possible to ensure a rapid turn-out. As regards the men, moreover, it is necessary to provide special means for them to restore themselves to a decent state after a call to a fire, which rapidly converts a man from a spick-and-span condition to one of grime and discomfort. As regards the first essential I will show by plans the method adopted to attain the object in view. As regards the second I will briefly describe the arrangements for accommodating the men, as also the difficulty in cases of this kind of overcoming objections to housing a man's family in the same building as that in which he does his duty.

The system of fire calls is arranged on the following plan:—Each station or sub-station is in direct communication with a superintending station, which in turn is connected with "headquarters." Grouped around and in communication with each of these stations or sub-stations are fire alarms, of which there are 1,317 in the County of London. A call can be received in three ways—from an alarm post, by telephone or bell at the station, or from the superintending station. A call from an alarm post causes a bell to ring and a red indicator to drop defining the post from which the call emanates. The duty man then pulls the "time switch," which simultaneously lights up the call lights and rings bells throughout the building, the lights and bells in the private quarters being operated only in those parts where the men are on duty. The lights and bells continue for three minutes. The duty man then notifies the superintending station of the call, and the superintendent in his turn notifies headquarters and the two stations adjoining the one at which the call has been received. This is known as a "home call." If the fire at the time of the call, or later, is more than the "home call" can cope with, a "district call" is given, and if the fire is still unmanageable, a "brigade call" is given.

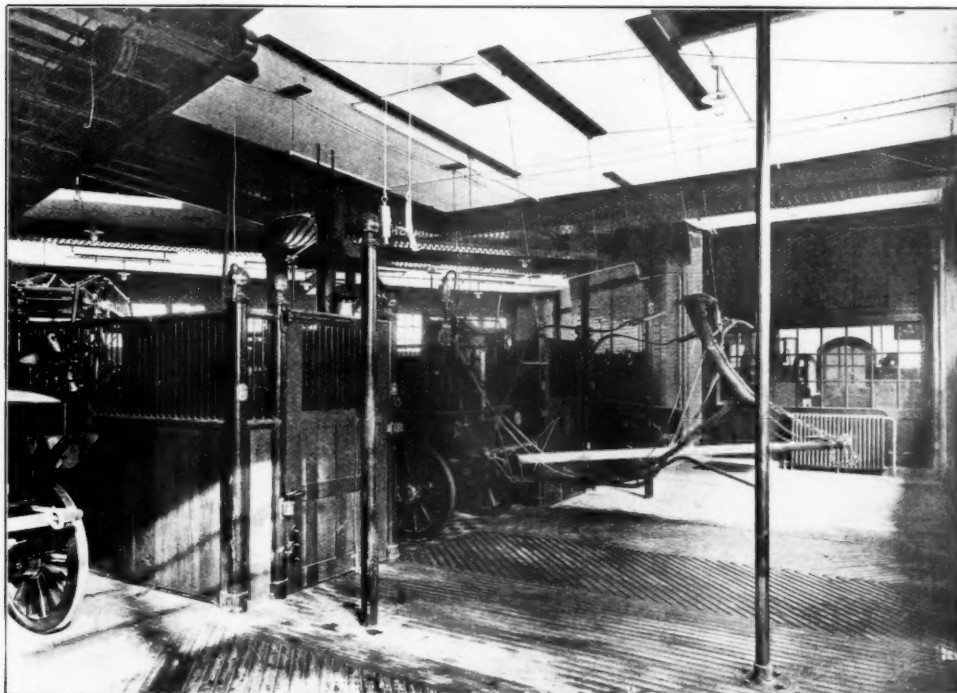
In some of the larger and more recently constructed stations coloured lights are attached to the ceiling of the appliance-room to indicate the particular appliance or appliances required to answer the call. A *red* light, for instance, indicates "horsed escape"; *green* the fire engine; *yellow* the long ladder.

In the case of a station where the traction is provided by horses the stall doors are constructed to open rapidly by means of automatic pulls. The trained horses then run out to their positions beside the escape, which is nearly always the first appliance to leave. Some of the men who are on night duty sleep fully dressed on trestle beds in the recreation room, others descend from upper floors by means of sliding poles, and having ascertained from the ceiling lights what appliance is required, assist in fastening the swinging harness suspended from the ceiling. They then mount the appliance and don their helmets, which are kept on the appliance in readiness. The man in charge of the appliance opens with a "pull" the large front gates, which work automatically, and the appliance passes out to its destination. In some stations the man on duty can communicate from the watch-room with the driver of any appliance by a loud-voiced speaking-tube ending in a megaphone directly over the driver's head, and so instruct him where to proceed. The time taken on an average is 15 seconds (Cannon Street Station).

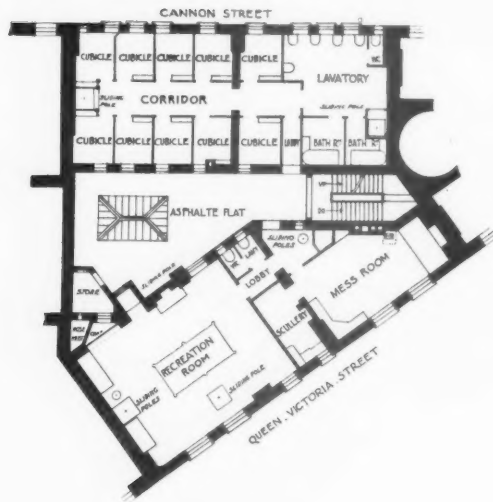
Meantime the same procedure is taking place as regards the fire engine, which follows the escape, the average time occupied in turning out in this case being 60 seconds. The men not on duty, in the event of a night call have to get up and dress. Steam is always kept in the boiler of the fire engine whilst standing in the station, at 100 lbs. to 120 lbs. pressure. The appliances having left the station the duty man informs his superintendent, who then takes charge, receiving information direct from the site of the fire. The superintendent directs operations according to the necessities of the case, drafting appliances and men as required from surrounding stations in the district. He then communicates with headquarters, and in relation to the nature and extent of the fire a "district" or "brigade" call is ordered, the appliances and men at the outlying stations drawing in to stand by in more important positions which have been vacated.

CANNON STREET STATION.

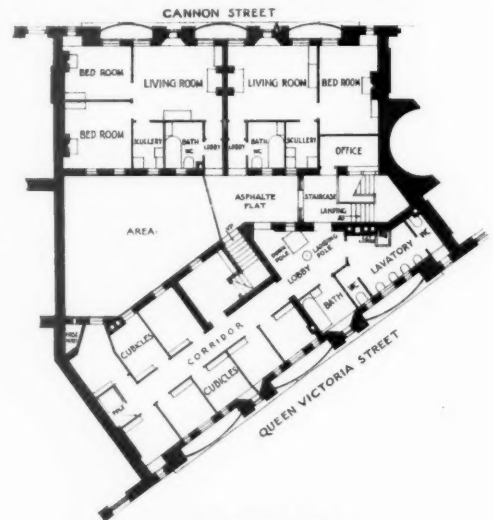
Owing to the inadequacy of the old Watling Street Station, the present Cannon Street Station, which stands at the corner of Cannon Street and Queen Victoria Street, was erected by the Works Department of the Council at a cost of £16,000. The building, which is faced with Portland stone on both fronts, was completed in 1907. This station provides accommodation for 1 horsed engine, 1 motor escape, 1 horsed escape, 1 manual escape, 1 Magirus long ladder, 1 hose cart, and 6 horses; with quarters for 1 station officer, 22 firemen, 4 coachmen. Eight of the staff are provided with "married quarters."



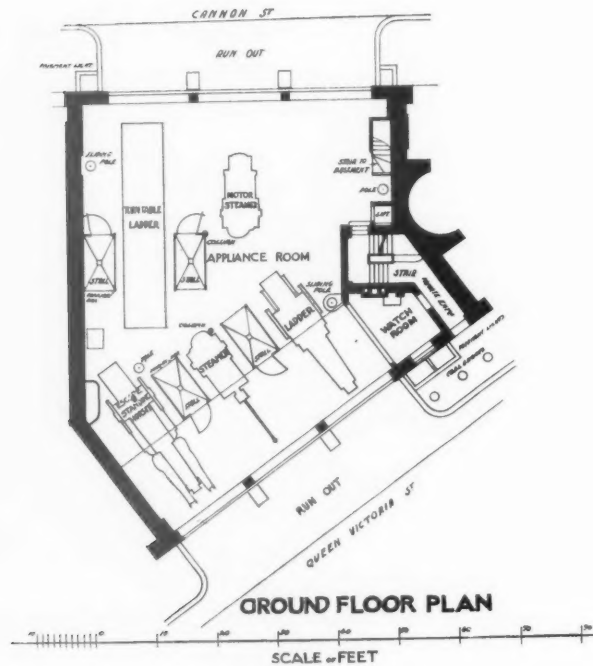
CANNON STREET FIRE BRIGADE STATION.



FIRST FLOOR PLAN

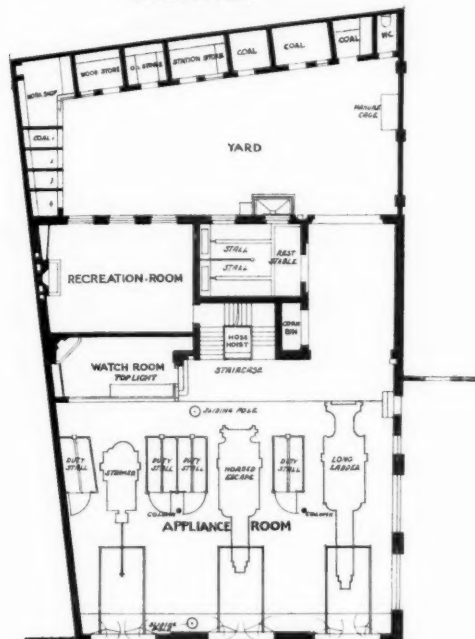


SECOND FLOOR PLAN.



CANNON STREET FIRE BRIGADE STATION.

SCALE OF FEET



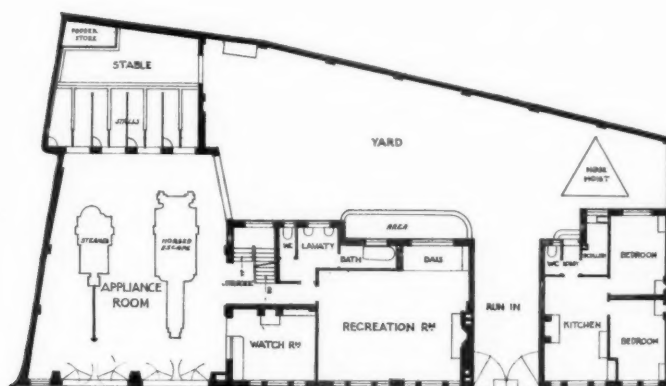
GROUND FLOOR PLAN

SCALE OF FEET



FIRST FLOOR PLAN

FIRE BRIGADE STATION, KENSINGTON.



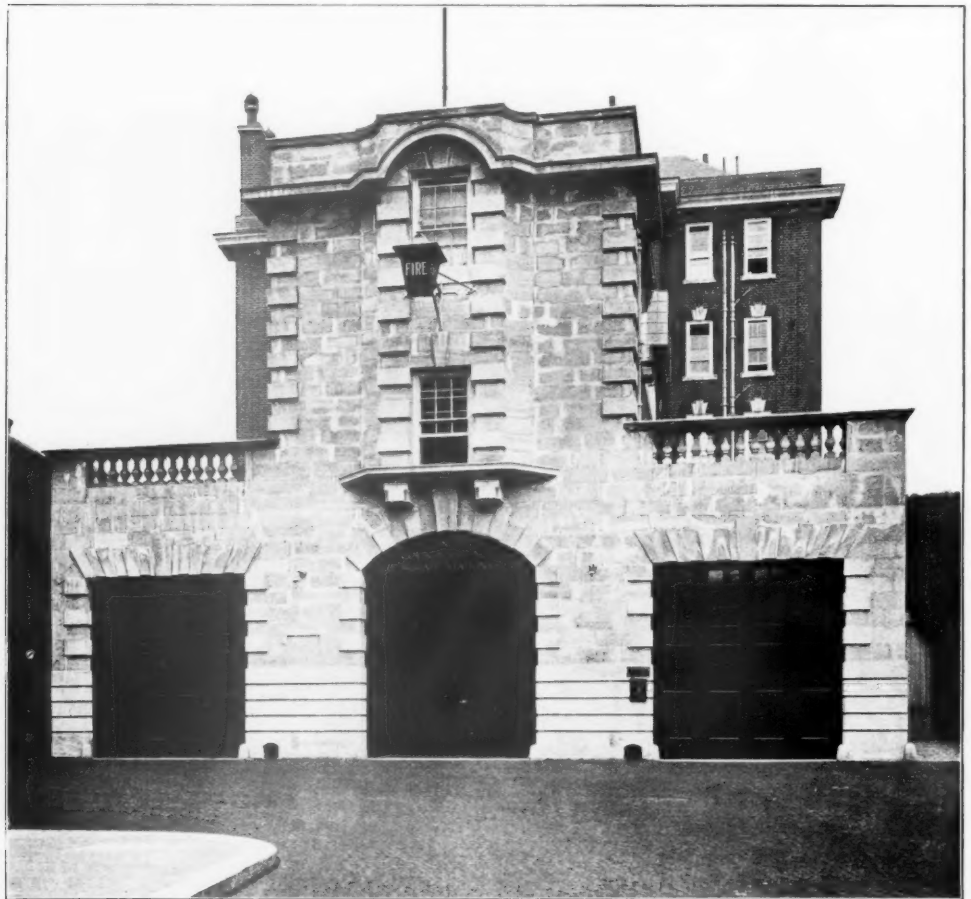
GROUND FLOOR PLAN

SCALE OF FEET

VAUXHALL FIRE BRIGADE SUB-STATION.

KENSINGTON STATION.

This Station was erected on a site covering an area of 6,100 square feet. The building, which was completed in 1905, was erected by Kerridge & Shaw, of Cambridge, at a contract price of £10,980. The elevation generally is of red brick with Portland stone dressings, the



KENSINGTON FIRE BRIGADE STATION.

portion immediately fronting the street being entirely faced with Portland stone. Accommodation is provided for 1 horsed engine, 1 horsed escape, 1 manual escape, 1 long ladder, and 6 horses; and the building houses a staff of 1 station officer, 15 firemen, and 3 coachmen. To eight of the staff married quarters are assigned.

VAUXHALL SUB-STATION.

Vauxhall is a typical sub-station. The building was erected by the Works Department at a cost of £8,400, and the station was completed in 1903. The elevation is of picked stocks with Portland stone dressings. Space is provided for 1 horsed escape and 1 hose cart, with a staff of 1 station officer, 1 coachman, and 5 firemen. It is now being extended to the capacity of a full station.



VAUXHALL FIRE BRIGADE SUB-STATION.

IMPROVEMENTS.

Our next subject is one of much public importance and interest, namely, that of street improvements. In this connection I will deal specially with the Holborn-to-Strand Improvement, which presented the opportunity of making as great a mark on the architectural appearance of London as is likely to occur for many years to come. There are, of course, other improvements which have offered, or will offer in due course, fine opportunities, but there is not time to touch on these.

Improvements between Holborn and the Strand were first mooted in 1836, when a Select Committee of the House of Commons was taking evidence as to necessary improvements in

the Metropolis. A connecting street was proposed between Holborn and the Strand by way of Lincoln's Inn Fields. Improvements in connection with the building of a Record Office on the Rolls Estate were suggested in 1847 by James Pennethorne, who proposed a spur street almost on the line of the western arm of Aldwych.

Again, a proposal was made by Mr. Teulon in 1878. It may be of interest to note that this scheme shows an island garden in the Strand not unlike that recently proposed when the suggested setting back of the Strand frontage was under consideration.

The desirability of an improvement was first considered by the Metropolitan Board of Works in 1856 and again in 1883. Their successors, the London County Council, have also considered many plans for this improvement. One point of prime importance was the question of the retention or removal of the Church of St. Mary-le-Strand. Its suggested removal aroused public opposition, with which this Institute can probably sympathise, as the church undoubtedly forms a highly-picturesque object in all views of the Strand, and its removal would have deprived that part of London of one of its most picturesque and interesting features. Previous schemes showing the new thoroughfare terminated by the church had been objected to, and the crescent-shaped Aldwych, with the "island site" between that street and the Strand, was finally decided upon.

The Council, in the earlier stages of the improvement, fully realised the necessity of obtaining the best results in the new streets, which, while affording improved facilities for traffic, would, it was hoped, result in an architectural treatment of great dignity, and it was held that, if a high standard of excellence were obtained, the cost of the improvement would be reduced. This Institute co-operated with the Council in selecting eight architects, who were invited to submit sketches for the various frontages. Those selected by the assessors as submitting designs which were considered suitable for adoption by prospective lessees were Mr. Henry T. Hare, Mr. W. Flockhart, Mr. Mervyn Macartney, and Mr. Leonard Stokes. However desirable in the interests of architecture the adoption of any of these schemes would have been, the Council has hesitated to impose upon its lessees any coherent scheme as suggested by these architects, with the result that each design submitted for new buildings is considered on its own merits. The Council has become, by reason of the surplus land acquired in carrying out improvements, one of the largest landowners of London, with a rent-roll of £325,000 a year, and, having regard to the interests of the ratepayers, it is most desirous of avoiding any restrictions as to elevation, &c., which might delay the letting of land. The building conditions have been amended in such a way that I do not hesitate to describe them as less restrictive than those in operation on any other large London estate. Although the circumstances have not been so propitious as they might have been, I venture to think that the architectural treatment, so far, is decidedly above the average hitherto attained in other metropolitan improvements.

Many references have been made in the Press to the squalid poverty which reigned for many years in this district, and to the noisome courts and evil-looking alleys which intersected this large area. One can scarcely credit to-day that many such places existed but recently in the immediate vicinity of St. Mary-le-Strand.

I ought not to pass from this part of my subject without making some reference to the work instituted by the Council of preserving a suitable record of architectural and historical buildings which are demolished in connection with Improvement Schemes. Every building is carefully surveyed and, if desirable, suitable photographs are taken; where any valuable detail, either in stone, wood or iron, is found, a measured drawing is prepared. This has now been the practice for some years, with the result that an interesting collection of many hundreds of drawings and photographs has been formed, which will be of great value in illustrating for future genera-

tions a phase of old London which is rapidly disappearing. I may refer in this connection to the panelled room with an ornamental ceiling from No. 2 Portsmouth Street. This house was attributed to Inigo Jones, and on the front were placed the Fleur-de-Lys, English Rose, and Torch of Hymen, in commemoration of the marriage of Charles I. with Henrietta Maria of France. Among our photographic records is a portion of a Roman bath from the site of Cannon Street fire-station; a portion of the old Roman wall found in Jewry Street, Aldgate, which has been preserved in a new building; and two chalk graves with skeletons complete found on the site of Bermondsey Abbey.

In connection with street improvements, which form a very important part of the work of the Council, attention is at once arrested by the fact that the actual or estimated gross cost of county improvements effected by the Council since 1889, excluding bridges, has amounted to £11,000,000, towards which the local authorities have in some cases contributed. This large sum can only be regarded as the cost of patching up mistakes and remedying deficiencies which should never have arisen had any attempt been made originally to lay out London on a definite plan. The recommendations of the Royal Commission on London Traffic as to street improvements commence by affirming that at the root of the problem of London locomotion lies the fact that many of the streets are too narrow; this fact is always endorsed at academic discussions, and idyllic hopes for the future are expressed; but it is to be doubted whether anything is being done to prevent a recurrence of the evils of which the effect is now so apparent. From 1897 to 1907 about 143 miles of new streets were sanctioned by the Council and 81,870 new buildings were erected in the county; but this enormous development has not been influenced by any directing control, and the meagre powers exercised by the Council under Part II. of the London Building Act provide only for a minimum standard which is quite incompatible with that laid down by the Royal Commission as to the width necessary in new streets. The building owner being only human, and his professional adviser being naturally anxious to make the most of his client's property, it is not, perhaps, surprising that the ideals which are so earnestly advocated in theory are not found to be adopted in practice in the development of suburban London. The want of control can only have disastrous effects, perhaps in the near future, but despite the high conceptions of what ought to be, it is doubtful whether any proposal, such as an amendment of the London Building Act on the lines of the Liverpool Act of 1908, to require a width of 80 feet in new main streets, would be favourably received.

The passing of the Town Planning Bill may have a beneficial effect, and the Bill as amended certainly gives greater promise by enabling land in course of development, or which, although built on, is necessary to a scheme, to be dealt with in such schemes. The scope of the Act in London would be restricted by reason of the comparatively small area within the county which is now unbuilt on, but the Act would in any case prove a useful supplement to the Building Act by compelling the provision of arterial communications.

BRIDGES.

There is not much to add to the very able paper which was read in this room a little while ago on the London Bridges by Professor Beresford Pite. It is no doubt fresh in the minds of many. As regards Vauxhall Bridge great difficulties beset this scheme in its early stages, and there is no doubt that a distinct step forward was made when the æsthetic treatment of it was decided to be a matter of collaboration between engineer and architect. Whether the pylons upon the shore piers, or some other such features giving emphasis to the bridge, will ever be erected is problematical, but I have always thought the importance and value of the whole scheme would be materially improved if something of the kind were added. Referring to the

sculptor's work on the bridge, the figures in the panels I think reflect the greatest credit on Mr. A. Drury, A.R.A., and Mr. F. W. Pomeroy, A.R.A. The energy and artistic feeling these artists have put into their work is of a standard that will doubtless win permanent approval.

As regards the necessary perforation of the abutment of Waterloo Bridge by the tramway near Lancaster Place, I should here like to express my appreciation of the efforts of this Institute to preserve unimpaired the beauty of this very fine architectural monument. The efforts which were made were not wholly successful. The change necessary to adapt it for modern tramway requirements could not be avoided. That the proposals of the Institute were not successful was no fault of theirs, nor, I submit, of the County Council.

The duties which devolve upon the County Council in regard to such points as the restoration of 17 Fleet Street, and the architectural treatment of the Victoria Station wall in Buckingham Palace Road, and of numerous other buildings of the most varied type such as Weights and Measures Stations, Gas Meter Testing Stations, buildings in the public parks, &c., though of no mean importance, would absorb time which is unfortunately not available.

I cannot however bring this paper to a conclusion without paying a warm tribute to the energy and marked ability of my colleagues who have co-operated with me in carrying out this programme of constructional work. It would be invidious to mention particular officers, but I feel that the County Council is served by a very efficient and loyal architectural staff, who are always ready to give of their best to bring to a successful issue any work which is placed within my responsibility.

DISCUSSION OF MR. RILEY'S PAPER.

Mr. ERNEST GEORGE, *President*, in the Chair.

MR. ANDREW T. TAYLOR, R.C.A., L.C.C. [F.], in proposing a vote of thanks to Mr. Riley, said that the architectural work of the London County Council was in two volumes. They had had that evening the first volume by its author, Mr. Riley. There was a second volume, its educational work, the author of which was Mr. T. J. Bailey. In 1899 Mr. Bailey had given them a Paper on the Elementary Schools of London, and it would be extremely interesting if he would give them a supplement to it at an early date. Mr. Riley's position was a very difficult one, but he should like to state on behalf of the County Council how much they appreciated his work. Necessarily he came in conflict with some of the architectural profession, who might occasionally feel aggrieved that Mr. Riley did not give them everything they expected; but he would ask their forbearance for Mr. Riley, because he had not only his duty to the architectural profession, but his duty also to the London County Council and to the numerous committees and chairmen of these committees. He could assure them it was not always easy to meet those views and reconcile them with what some members of the profession thought right. A good deal of Mr. Riley's work and what had been shown that evening was necessarily of an engineering character; but he thought they would agree that the architectural portions of the work were treated in a most remarkable and

able way. There was a breadth of treatment, a bigness and a dignity about them which reminded one somewhat of old Roman work. In purely architectural work he had been on the whole extremely successful, and he would instance particularly that charming little building of his on the Thames Embankment. As regards the vexed question as to how far the London County Council should do its own work, to the exclusion of the general profession, he had great sympathy with those who thought they ought to have a greater share in the architectural work of the London County Council. He shared in large measure their feeling, because official architecture was apt to run into grooves and become more or less stereotyped. He could assure them that the London County Council felt they had an immense opportunity for good or for evil in the architecture of London; they realised it to the full, and they had a great desire to get the best results obtainable. Therefore, if better results were to be got by allowing outside architects to participate, the County Council would be only too ready, and he for one would do all he could where special buildings were concerned to get their co-operation. He was quite sure he should carry Mr. Riley with him in saying that he had so much to do that it was impossible for him to give his undivided attention to the whole of the work. If special work were thrown open to outside archi-

fects they should get that freshness and beauty they all appreciated, and he was sure Mr. Riley himself would not be averse to its being done occasionally. He begged to thank him for his extremely interesting and able Paper.

Mr. T. J. BAILEY [F.], Architect to the L.C.C. Education Department, in seconding the vote of thanks, said that the number and variety of buildings for which Mr. Riley was responsible must be a very great strain upon the architect's brain. He knew the difficulties of dealing with committees, and of working for a body like the London County Council, where various committees had their own interests and no official cognisance of the work done by other committees. The result was to overload the architect in one direction with work, and work would be pressed upon him by another committee, and so in three or four directions at the same time great stress would be put upon him. He did not know whether Mr. Riley had one of the difficulties he himself had to contend with, when the Finance Committee came down with a severe critical lash, and added another terror to their troubles. Some of Mr. Riley's buildings did not seem to bear comparison in the same way that education buildings did, where people were apt to compare one with another and ask why one building should cost so much a head more than another of the same class, without taking into consideration different circumstances. He had no doubt, however, that Mr. Riley's work had to be kept within due limits of economy. Mr. Taylor had suggested that he should read another Paper to the Institute, and reminded him that it was ten years since his last Paper was read. It did not seem so long ago; but that Paper, he was proud to say, was considered a useful Paper, and he should be glad to give another, which he hoped would be equally useful.

Mr. JOHN W. SIMPSON [F.] said he should like to strike perhaps an even more enthusiastic note than the previous speakers had done, for he thought many present must have been extremely struck by the great dignity and beauty of much of the design which had been put upon the screen before them. A meeting or two ago they had had a very interesting paper by Mr. Swales on the work that was being done in America, and he thought they might say without hesitation that much of the work Mr. Riley had shown them was quite equal to that fine and bold conception of utilitarian work which Mr. Swales had put before them. The subject was too vast and complicated for anybody to attempt to analyse at a moment's notice; but he should like to add his quota of thanks to Mr. Riley for the interesting manner in which he had put it before them.

Mr. WM. WOODWARD [F.], in supporting the vote of thanks, said the Paper was very terse and very much to the point, and afforded little scope for wandering outside its subject. Mr. Taylor had wandered somewhat in the direction he himself

should have taken with regard to the question whether it was desirable for the London County Council, or the Borough Councils, to erect these dwellings for the working classes, or whether they should be left to that outside enterprise which was always forthcoming—with a profit—to meet the demand. He might have had one or two criticisms to offer on the external architecture: he did not hesitate to say, however, particularly with regard to the fire stations, that it would meet with the approval of most architects who took an interest in commercial architecture. With regard to housing the working classes, they would all agree that the Metropolitan Board of Works especially, followed to some extent by the London County Council, did most seriously and most unnecessarily anticipate the pulling down and clearance of sites before they were at all ready to re-erect buildings on those sites. When the Metropolitan Board of Works many years ago cleared away the slums of Drury Lane, it would be remembered that hundreds of poor people were turned out of their homes without any provision whatever being made for the immediate starting of new buildings to rehouse them. But that mischief had been considerably modified by the experience gained by the London County Council. The cost Mr. Riley put for each tenement was 8s. 6d. per week—a fourth probably of the average wage of a workman. That formed a very large proportion of the average wage of the classes for whom these dwellings should be erected. He thought they should all agree that no more than one-eighth of a man's wages should be expended in the rental of his dwelling. Therefore, notwithstanding the cost per foot cube, to which he would refer directly, he thought some other means should be taken to provide for the real working classes who could not afford to pay more than 3s. 6d., 4s., or 4s. 6d. at the outside for a decent tenement. Mr. Riley told them that he gave 150 feet super for living-rooms and 100 feet for bedrooms. Might not those areas be reduced, so that more dwellings with the same accommodation could be placed upon the site. Taking a two-roomed tenement—and the desire for a two-roomed tenement seemed in the ascendant—Mr. Riley said that very few schemes could be made to pay if the charge for the land alone was more than about 5s. per foot freehold. At the time the Peabody Buildings and the earlier dwellings of this type were erected it was estimated that if the annual rental exceeded 3½d. a foot it was impossible to get a financial return. Therefore it came to this, that if these dwellings for the working classes were to be provided, the land must be obtained at far less cost than it could be at present. How that was to be done was for the Legislature to decide. They would all agree with Mr. Riley about those projections in suburban dwellings which extended sometimes considerably beyond the back line and interfered with the free circulation of air. The first block dwell-

ings erected by the Metropolitan Board of Works—in Newport Market, he believed—were built upon what may be termed a G plan, that is to say, a centre with two large wings, which permitted the accumulation of vitiated air. That planning was condemned at the time, and he believed had not been repeated. Coming along in the train the other day he noticed that one of these projections had been utilised by the tenant—the coping with boxes for growing primroses, and lattice-work with a little ivy twined round, as one sees in the humblest dwellings in Italy and Spain. He often wondered why advantage was not taken in the country suburbs of these opportunities of growing flowers in such an economical fashion. Mr. Riley told them that the profit on the Caledonian Asylum Estate was only 1.15 per cent. on the gross rental; he did not tell them what the profit was on the net rental. He also said that 7.86*d.* per foot cube was the cost for those buildings. They would all agree, from the manner in which those buildings had been erected, that 8*d.* per foot cube was not an excessive price. It seemed therefore that, allowing for repairs and maintenance in future, if the London County Council could only secure 1.15 per cent. now, it was exceedingly probable that in future there would be scarcely any profit, and that particular class of building might result in loss to the ratepayers. Coming to the cottage buildings, the idea of these cottages would meet with the commendation of everybody who looked at Mr. Riley's plans and elevations. These cottage estates entailed a very large purchase of land. Mr. Riley told them that he allocated something like thirty-three cottages per acre; that meant that each cottage was given something like 1,300 feet. For a cottage to be let or sold at the figure quoted by Mr. Riley it was obvious that the land must be obtained at a very small cost indeed. Mr. Riley stated that the block dwellings had cost 9.8*d.* per cube foot, and the cottages averaged 6.14*d.* per cube foot at Tooting and 4.97*d.* at Tottenham. Probably Mr. Riley could account for the very great difference between the cost of cottages at Tooting and those at Tottenham. Mr. Riley had given them some interesting information, which would be very much appreciated, or depreciated, by the quantity surveyor, as to how he obtained his tenders for cottage dwellings as distinguished from tenders for his block dwellings. He did not employ a quantity surveyor, but prepared a working drawing, a specification and some details, and from these documents first-class builders tendered, and he found that the variations in the contract presented no difficulty to him. He understood, however, some years ago from the Master Builders' Association that they would not tender for any work unless quantities were provided. He should like to ask Mr. Howard Colls whether that was the arrangement made with the Master Builders, and how it was they allowed Mr. Riley to be so

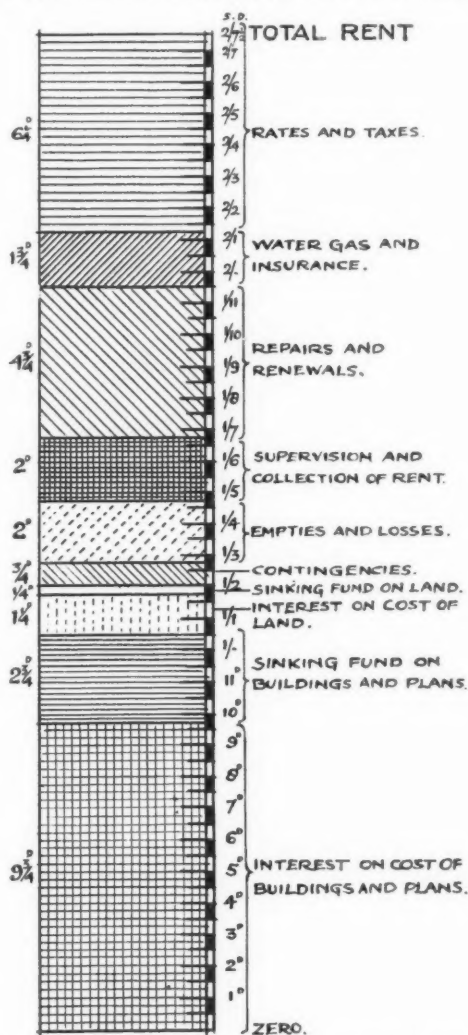
successful as he claimed to be. With regard to the New Cross Car Shed, it had been hinted—and he thought the drawing confirmed the hint—that, to say the least, the London County Council had dealt rather "liberally" with certain provisions of the Building Act. With regard to the Holborn and Strand Improvement they were all very glad to know that the London County Council had seen fit to alter the original conditions upon which they were letting this land, and that they had extended the term of the lease and had given more freedom to the designs. It was very difficult indeed—Paris found it so, and Baron Haussmann found it so—to get tenants to occupy undeveloped, or practically undeveloped or half-developed sites. In his opinion the Council would do well, having regard to the way in which they dealt with the sites in Kingsway, to make the rents still more progressive—to start with a very low rent indeed and extend that rent, as he believed they did in Paris, until they got the site fully built upon. They would then get their ultimate rent, and, instead of the large proportion of vacant land now to be seen, they would find a repetition of some of the buildings the architecture of which commended itself to most of them. He would conclude by congratulating Mr. Riley on his very useful Paper, and the Council of the Institute upon having invited him to read it.

MR. RILEY, in responding, said that Mr. Taylor, in very flattering and very kind words, had endorsed what one had repeatedly felt; but it was very gratifying indeed to have it at first hand from a witness who could see the enormous strain to which the Architect of the London County Council was necessarily subjected in carrying out works of any kind whatever. If they looked at their old friend "Gwilt" they would find a definition of "Municipal Architecture." The term was applied to "buildings erected for civil and municipal purposes such as town-halls, guildhalls, &c." They all knew how many of those he had erected! To Mr. Bailey, as a colleague who knew quite intimately the difficulties of dealing with works of this character, he had to express his most cordial thanks and appreciation for the kind words he had uttered. Mr. Simpson, also, he thanked most heartily—the appreciation of a man in Mr. Simpson's position as an architect he was keenly alive to. To his friend Mr. Woodward also he was much indebted. He would try, as briefly as possible, to answer one or two of the points Mr. Woodward had very properly brought to the notice of such a representative meeting. He would not touch on the points of appreciation, but would turn at once to the points of criticism. It was only by acknowledging where we failed, and where we could amend our ways, that we were able in any way to give information that was valuable to others. As regards the sites of the block dwellings which Mr. Woodward suggested were cleared with too much generosity by the Metropolitan Board of Works: one site had been

vacant for thirteen years, and he (the speaker) was suddenly called upon to cover that site. Three efforts had been made to sell it earmarked for housing purposes. Two of those sites had been offered again and again earmarked for housing purposes, and both the Council and the Metropolitan Board of Works before them had failed to get bids which would enable the land to go off for the purpose. This very process, indeed, had been repeated within the last three months with the same result on another site. Earmarking for housing purposes nearly rendered certain sites in London valueless. He hoped to be able to show by a diagram what this matter meant. As regards the question of a workman's rent, of course they were all keenly alive to the fact that if he could be housed at one-sixth of his income (which Mr. Woodward would find was about the economical limit) he could do very well; but the diagram he wanted to show them demonstrated the financial position of a block of dwellings which yielded a rental of 2s. 7½d. per room per week. They were self-contained tenements, and had a scullery, w.c., and other accommodation for each one of the tenements. Out of the 2s. 7½d. the architect was given the capitalised income from 9¾d. to erect the buildings. Let it be realised that the buildings must earn everything—they must earn not only the interest of the sinking fund, but they must bear the cost of the buildings themselves, and the land, the management, rates and taxes, all repairs, insurance and contingencies which would enable these dwellings to be returned to the ratepayers of London free of all incumbrances at the end of fifty-nine years. He thought if they came to put those figures together and worked them out they would see that 9¾d. was about the bed-rock for doing anything useful. When he spoke of the Caledonian Asylum Estate, which was Part III., where land was not written down at all, the profit beyond all the expenses on the past year's working was 1·15 per cent. of the gross rental. It paid for everything, including repairs—and repairs which were calculated on a basis which was supposed to cover the whole period in which the dwellings would be occupied before they were handed over free of charge. One other point he was glad Mr. Woodward had drawn attention to was the area allowed in living-rooms and bedrooms. If he would work out 150 feet and 100 feet respectively he would find that the 150 feet, which allows for the "living" accommodation—that is to say, day living accommodation, at 8 feet 6 inches clear height—did not give too much cubic air-space, and in the bedrooms certainly he thought it gave the minimum which was prescribed. As regards the Peabody Buildings he had only to point out that they were subsidised and that the County Council Buildings were not. He would like to explain that the reason why the cost at Tooting and at Tottenham varied from 6·14d. at Tooting to 4·97d. at Tottenham was purely topographical. At Tottenham they used Fletton bricks,

which could be brought very easily to the site; at Tooting Kentish bricks had to be used. These cottages were brick boxes, with very little else. If the brickwork could be done cheaply, the whole

DIAGRAM SHOWING AN INDIVIDUAL CASE OF INCOME AND EXPENDITURE PER ROOM PER WEEK.



NOTE.—The diagram represents in alternate vertical divisions above zero the estimated average rental per room per week on a block of buildings, one division representing one halfpenny.

To obtain the influence of any desired item upon rental, take the space occupied by that item. This will represent in halfpence the portion of the average rental per room per week used up by the item in question.

question was solved. Perhaps there was no other professional man in the world who experienced more criticism of his work than an architect, whether in private practice or in public service, and domestic architecture perhaps offered the widest scope. At all events, the architect who built cottages for the working man got an amplitude of criticism. Good, fair, healthy criticism they could all appreciate, but they would generally find that, should any hitch take place, some one had to make an explanation, and should that some one be an architect, he would not only be asked why he had designed in such a manner, but most likely why he could not build for, say, £200 what he estimated would cost £250. Architects, however, had to cultivate broad backs. He had known an estate on which cottages were built according to the estimates, and precisely according to the scheme on which the finances were based (he did not do the financing for his—the financing came from another quarter), without incurring one penny of embarrassing extras on the original proposal. After the houses were ready for letting only a few tenants were obtained. The local Press criticised the houses in the most severe manner, and they were practically boycotted. Why would they not let? Because, it was stated, the rooms were too small for one man to stretch himself comfortably at full length. Doors and windows were too small to admit bedsteads, and the doors, moreover, had quite a peculiar appearance because the panels were not according to stock pattern. Pianos refused to enter openings of such narrowness. The windows had such small panes that they might have belonged to prison cells. How could anyone see out of such windows, or how could light get in? Surely, said the Press, all these were bad errors on the architect's part? Possibly. But the sequel was very interesting. Rents were lowered: with the result that bedsteads, pianos, and furniture of extraordinary dimensions for such small families found an entrance without even chipping the paint off the arrises of the same narrow doorways which had previously stood in the way of the letting of the houses. Thus it would be seen that the rent of a tenement bore a distinct relation to the width of the door; the windows with the small panes really looked quite well, and the light in the room had become so dazzling as to necessitate the purchase of elaborate curtains to subdue it. It was well however not to be discouraged, but to accept criticism and be oneself its critic; to retain for one's own use the good, and cheerfully drop the bad. It had become rather the fashion lately to hunt the City Watch. He was in the position of the City Watch. A man with the robe of office had got, like Hercules, his Nessus shirt: but when the time came for him to drop into oblivion as an ex-official, he hoped to do so without repining, as many better men had done before him.



9 CONDUIT STREET, LONDON, W., 24th April 1909.

COMPETITIONS.

Reading County Offices Competition.

Members of the Institute proposing to enter for this Competition are requested to communicate with the undersigned before taking any further steps in the matter.

IAN MACALISTER, *Secretary R.I.B.A.*

CHRONICLE.

Amendment of the London Building Acts.

The following letter bearing date the 5th March and addressed from the President of the Institute to the Chairman of the London County Council, has been handed in for publication:—

SIR,—In the London County Council (General Powers) Bill of this Session, section 5 provides for an amendment of the London Building Acts.

From the Report of the Building Act Committee of the London County Council in the autumn of last year, recommending the proposed Bill, I quote the following sentence:—

"Under the London Building Act of 1894 the walls of all buildings must be of the thickness prescribed by the first schedule of that Act, with the effect that the walls of buildings mainly constructed of steel or reinforced concrete have to be of a greater thickness than is necessary for stability, thus unnecessarily diminishing the floor space of the buildings. The Committee therefore recommend 'that application be made to Parliament in the Session of 1909 with a view to the amendment of the Building Act of 1894, so as to facilitate the use of steel or reinforced concrete in the construction of buildings and to make any necessary provision with regard thereto.'"

The Bill was sent to the Council of this Institute for consideration and it was found that it went far beyond the question of dealing with external walls.

Later on, a Conference was called by the Superintending Architect of the London County Council to consider the provisions of this Bill. The Bodies

invited by him to send representatives were the Councils of the Royal Institute of British Architects, the Institution of Mechanical Engineers, the Surveyors' Institution, the Concrete Institute, the British Fire Prevention Committee, the London Master Builders' Association, the Institute of Builders, and the District Surveyors' Association, and all these attended. The Institution of Civil Engineers was also invited but, I understand, declined to attend. It may fairly be assumed that *the Bodies invited were those whom the Superintending Architect thought were most competent to deal with the Bill in question.*

On the 14th January the first meeting of this Conference after an exhaustive discussion passed a resolution with only one dissentient vote, "*that the scope of the Bill should be limited to the enclosing and party walls.*" As, however, there was but one sentence in sub-clause 11 which deals with party walls (with which sentence my Council concurs), it may be taken that the resolution dealt only with the enclosing, *i.e.* the external walls.

I need only say in passing that at subsequent Conferences the details of the Bill were considered but with the expressed condition that this consideration was subject to the above resolution.

On the 18th January the said resolution was considered by the Council of this Institute, when it was resolved "that this Council unanimously endorses the resolution passed at the Conference on the 14th instant and urges that the draft Bill should be amended accordingly," and a copy of this resolution was forwarded to the Clerk of the London County Council on the 20th January.

The Council of the Institute of Builders took a similar view and sent it to the County Council.

On the invitation of the Building Act Committee the Conference sent representatives of each of its constituent parts to lay the case of the majority before the Committee, and this was done on the 15th February. It was then stated to the deputation that the Superintending Architect would be later asked to lay his views before the Building Act Committee; but, so far as we are aware, no opportunity was ever afforded any of the Bodies represented at the Conference to hear what was stated or in any way to answer it. We have had no official communication as to the result of the Committee's deliberations, but we learn that they have decided to proceed with the Bill in opposition to the views of the Conference.

The Council of the Royal Institute of British Architects have considered the situation thus created. It must be manifest to you that when a Conference of Bodies selected by the Superintending Architect has passed an all-but unanimous resolution against the Bill as drawn, that the technical opinion of experts who are daily in touch with building in London is very gravely opposed to the legislation suggested, and that that opinion is entitled to great weight.

My Council are in absolute sympathy with the desire to provide a manner of dealing with the external walls of buildings other than that prescribed in the first schedule of the existing Act, as suggested in the quoted report of the Building Act Committee; but the present Bill deals not only with these walls but with the whole of the internal iron or steel skeleton construction of buildings, which internal construction has hitherto been left to the responsibility of building owners and their professional advisers subject to the supervision of the District Surveyors. It may be broadly stated that the multitude of buildings erected in the past thirty years with girders and columns could not be repeated under the proposed enactments.

My Council submits that there is no necessity whatever for any such interference with this internal construction.

The District Surveyors have represented to the Building Act Committee that the proposed enactments will materially increase their work to the extent of about four times what it is now, and they ask that their fees should be increased in a like ratio, and submit a scale which on any large building would involve the building owner in a payment of possibly hundreds of pounds for such fees. They say that "the immense amount of labour involved in the design and delineation of the proposed buildings would have to be followed in every particular by the District Surveyor," and "would necessitate the minute supervision of buildings during erection."

Assuming this all to be correct, it need not be pointed out that it would in like manner involve a great deal of extra labour on the architect to supply what is necessary and to go into the detail with the District Surveyor.

The architect has no desire that building owners should be saddled with this great extra cost.

Among other things it is also provided (sub-clause 29) "that before a building can be commenced the complete drawings of a building showing the details of construction of all its parts, the detailed copy of all calculations of loads and stresses to be provided for, and particulars of the materials to be used shall be deposited with the District Surveyor." In practice this would involve a delay in the starting of a building of it may be some months while heavy ground rents may be accruing due, involving again a very heavy loss on the building owner, and as the adoption of steel framing and concrete construction is mainly resorted to in order to save time this delay would be a grave matter.

In addition to all the above the proposed enactments will add considerably to the cost of building *per se*.

My Council submit to you that this unnecessary addition to the cost is a heavy tax on building operations in London which falls directly or indirectly not only on building owners but on tenants; it tends to restrict building operations, and therefore affects the community; it throws a grave responsi-

bility on District Surveyors and on the London County Council.

The other point that is of grave importance is the appeal (sub-clause 32) from a decision of the District Surveyor. Such appeals will be on very technical matters affecting building construction and should be heard by the technical Tribunal of Appeal established by the Act of 1894.

I have refrained from dealing with the details of the section, confining my remarks to grave questions of principle involved.

It would seem to be very regrettable that this Bill should be prosecuted at heavy expense to the ratepayers and opposed at equally heavy expense.

I have therefore to ask that you will kindly submit this communication to the Council, and to express the earnest hope that in view of the decision of the Conference your Council will adopt the view of the representative Bodies before mentioned.—I am, Sir, your obedient servant,

ERNEST GEORGE, *President R.I.B.A.*

Architectural Copyright.

The Diplomatic Conference between the official delegates of the various countries adherent to the Convention of Berne, which was held at Berlin in October last, resulted in important changes being made to certain articles of the Convention. The British Foreign Office, in consequence of the action of the R.I.B.A., withdrew its previous opposition and adopted the views of the other signatory countries. Architecture has thus at last been accorded its proper place between the sister arts of painting and sculpture (*vide* Article 2 revised) and is recognised as having the same rights to legal protection.

A Committee of the House of Commons has been appointed to examine and report upon the proposed changes before the new Convention is ratified by Parliament, and the Council of the Royal Institute of British Architects has been invited to give evidence before this Committee. They have accordingly appointed Mr. John Belcher, R.A. [*Past President*] and Mr. John W. Simpson [*Vice-President*] to represent them.

Members of the Institute are reminded that the desirability of protecting the work of architects in the same way as that of painters and sculptors is protected has been urged for more than thirty years by the representatives of the profession in all civilised countries. The International Congresses of Architects at Paris in 1878, 1889 and 1900, at Brussels in 1897, at Madrid in 1904, London in 1906, and Vienna in 1908, have each passed unanimous resolutions to this effect; and similar resolutions have been adopted by the Congresses of the International Association of Art and Letters held at Paris, Madrid, Neuchâtel, Milan, Barcelona, Antwerp, Berne, Monaco, Turin, Liège, Bucharest, Mayence and elsewhere, from 1878 to the present time.

British architects have always been very tolerant towards artistic plagiarism, which may perhaps be considered as a tribute (sometimes awkwardly expressed) by the copyist to the originator; but that deliberate appropriation of an architect's work which it is desired to prevent, cannot be defended, and in no way advances the standard of professional knowledge and attainment.

The view it is desired to maintain is, shortly, that the building commissioned by the employer is but a reproduction (in suitable materials) of the architect's design on paper, just as a bronze or marble statue is but the reproduction of the sculptor's sketches and clay models. Both reproductions require the supervision and skill of their designers to bring them to perfection.

It will be remembered that, under the existing legal precedents, the ownership of the architect's sketches, notes, drawings, and calculations from which the building is erected, is vested in the employer; while the corresponding documents and models of the painter and sculptor are protected.

All members of the Institute who have had reason to complain of the unauthorised reproduction of their drawings, or of their executed work, whether as regards plan-arrangement, elevation, or otherwise, are requested to communicate short particulars to The Secretary R.I.B.A., without delay. Such communications will, if so desired, be treated as confidential.

Expressions of opinion from the Councils of Allied Societies would, if sent at once, be of great value, and any observations they wish to make upon the desirability of architects retaining the copyright of their drawings when compulsorily deposited with Local Authorities (in regard to the execution of architectural work by such Authorities) would be opportune at the present moment.

Advice to Architectural Students.

A Joint Committee of the Prizes and Studentships and Records Committees of the Institute have drawn up a memorandum consisting of a number of detailed and explicit suggestions for the guidance of young architectural students in the pursuit of their studies, and especially for those entering for the Prizes or holding one or other of the Travelling Studentships in the gift of the Institute. The document is printed below, and will be found appended to the Prizes and Studentships pamphlet just issued, under the heading "General Advice to Architectural Students."

1. The student of architecture cannot begin too early to observe and analyse buildings for himself. By comparing building with building he may form his judgment on an actual basis and obtain initiative and power.

2. Wherever the student lives—in London, a provincial city, or in the country—he will easily find an ample body of material to investigate and record.

3. From the first he should bear in mind this

double purpose of his work: investigation as part of his own education, and the recording of his observations so that they may not be lost.

4. It is undesirable to hesitate as to what to begin upon. Practically any piece of good work—a cottage, a farm gate, a piece of furniture, or a staircase—will afford practice for a beginner.

5. After a time some students will find it stimulating to take up special interests, and to collect drawings of old ironwork, plaster, woodwork, and the like. The following of one trail for a time brings an intensity of understanding not to be otherwise gained. The London student has an overwhelming mass of material from which to select—Roman remains of London, Classic and Renaissance remains, or reproductions in the museums; and detail of existing buildings of the eighteenth century, such as balconies, fanlights, balustrades, &c.

6. After some experience has been gained a selection of subjects may best be made from the point of view of analysing construction and of forming a body of observations as to the best way of doing the several parts of ordinary modern buildings—such as reasonable windows, doors, and skylights, suitable ways of finishing roofs at eaves and gables.

7. From the historical aspect, records of buildings or works of art which are perishing by decay or about to be destroyed will have special value.

8. The best way of studying existing work is by the method of "measured drawings." In preparing these the chief aim should be to analyse and explain the construction and special characteristics in an accurate and clear manner.

9. In preparing the drawings it is desirable to aim as far as possible at some degree of uniformity of method from the first; a uniform series is much more valuable, and can be referred to more easily than heterogeneous notes. It is of great importance that the student should endeavour to present his observations in a clear, workmanlike, and unaffected way. (If shadows are indicated on measured drawings they should be worked out by rule.) Preconceived ideas as to what is artistic drawing are misleading, but accuracy is always safe. Avoid eccentric lettering, borders, &c. A good model for lettering can usually be found on the title-pages of old books; and such models should be studied.

10. As much as possible drawings should be finished on the spot or while the object is still accessible. It is unadvisable to collect a body of notes and sketches with the hope of working them out afterwards.

PRIZES AND STUDENTSHIPS.

11. Later, and especially if he should obtain a travelling studentship, the young architect is advised to investigate some special branch of architecture. He may analyse some famous building, or some special features like domes, or vaults, or towers; or he may form a group according to geographical distribution, age, purpose, materials, &c. Very little systematic work has been done by English architectural students of late years in Athens, Rome, or Pompeii; and whole classes of work, like English and French Romanesque, Greek and Roman work outside Athens and Rome, the Mediaeval architecture of Switzerland, Austria, Hungary, Byzantine architecture of Italy and outside Constantinople, the Arab art of Egypt, Palestine, North Africa and Spain, remain uninvestigated.

12. The student is particularly advised to maintain a course of historical reading *pari passu* with the sub-

ject he has in hand, since it is well to remember that buildings are the outcome of social as well as constructional conditions.

13. Before settling down to the piece of work chosen to be measured the student is advised to obtain all the information he can as to other work or works by the same architect.

14. It should be remembered that draughtsmanship is a means to an end. The study of old buildings becomes useful mainly through mastery of structural facts. A long period spent on a single fine building is of more value to the student than the same time spent over many places and buildings. Several months' study of one building allows the student to cultivate the instinct for proportion, for the right use and disposition of ornament and mouldings, and their relation to the structural facts. The nature of materials, their colour and texture, should so far as possible be indicated. The dimensions of bricks and their jointing, and of all masonry, and all wall and roof coverings, constitute an essential part of working drawings.

15. In measuring a building the student should set himself the task of preparing working drawings from which that building could be rebuilt, when the materials and methods shown are no longer customary or traditional. The parts of a building which it has been impossible to measure should be clearly indicated. Measured drawings should be supplemented with photographs where these are obtainable, but photographs should not take the place of measuring.

16. Work should be begun with plans and section. The elevations are the outcome of the structural problem. The most useful sketches are sectional and elevational records to scale, fully dimensioned, with notes and a key showing relation of the whole to the part. Books of paper squared to scale are useful in this connection.

17. Memory sketches are useful to strengthen the memory, but they are of little or no value as authentic records.

18. If the records thus made are to have their full value, they themselves must be preserved. The student from the first should have in view the formation of a collection which may ultimately be deposited in museums or libraries, even if they are not published.

19. The student would derive great benefit from carefully measuring up Classical or Mediaeval remains and utilising his knowledge of the style and period in working out a restoration or imaginative lines, basing his methods on those of the Prix de Rome students.

20. Students are further recommended to acquire some knowledge of the language of the country which they propose to visit, and to observe a general attitude of courtesy towards officials and attendants. They should procure a good guide-book and authentic maps of the district, as well as a pair of field-glasses and a pocket-compass, as the north point should always be shown on a plan.

The Wellington Monument in St. Paul's.

The following correspondence has appeared in *The Times*:—

9 Conduit Street, W. : 16th April 1909.

SIR,—As President of the Royal Institute of British Architects, I feel it my duty in the interests of the public to draw attention to the condition of the Wellington Monument in St. Paul's Cathedral.

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Since its re-erection in the nave serious defects have appeared, and some time since its insecurity and the danger of increasing the load above the arch were pointed out. Owing, however, to the elevation of the then Bishop of Stepney (the chairman of the committee) to the Archbishopric of York, further action was stayed.

We have again communicated with the "Monument Completion Fund" Committee on the subject, but have been unable to elicit any information whatever as to their intentions.

My Council have, therefore, no alternative but to state that in their opinion—

1. It would be dangerous to place an equestrian statue probably weighing several tons on the top of this structure.

2. The existing settlements render any attempt to strengthen the monument for carrying an additional weight a serious undertaking.

3. Any proposals for such work should be submitted to expert opinion.

Apart from the risk of further damage to the monument, there are æsthetic questions involved. In the case of a public monument of such importance, both as regards its historical value and as representing the work of a renowned English sculptor, every effort should be made to prevent any tampering with it which might lead to serious disaster.—I am, Sir, yours faithfully,

ERNEST GEORGE, *President R.I.B.A.*

10 King Street, Covent Garden, W.C. : 19th April 1909.

SIR,—The Secretary of the Royal Institute of British Architects wrote to me some time since asking in the most general of terms for information as to the intentions of my committee. I informed him in answer that when the committee met I would lay his request before them, and give him such information as the committee allowed me. A fortnight ago, on my return from a visit to Spain, I found a letter from the Secretary asking when a meeting of the committee would be called, whereupon I informed him that the committee were likely to meet within the next three weeks, when his communication would be laid before them. It was no duty of the committee to meet expressly to answer a roving request for information as to a design which had been exhibited in public for many weeks in the year before last; and I am surprised that the President of the Royal Institute of British Architects could not wait until the time I mentioned had passed before writing to the Press. As to his suggestion that any proposals for work on the monument should be submitted to expert opinion, he must have a very low opinion of the intelligence of the Dean and Chapter, whose authority in this matter is absolute and sole, if he supposes that they have given their approval to the design exhibited without consulting expert opinion.—I am, yours faithfully,

HAROLD HODGE,

Hon. Sec. Wellington Monument Completion Fund.

In a note which appeared on the 21st inst. *The Times* states that, upon inquiry of members of the Chapter of St. Paul's Cathedral the previous day, its representative was informed that the question of ensuring the stability of the Wellington Monument before the erection of the statue upon it had been fully considered, and every precaution that the highest expert advice could suggest would be taken. The weakness and cracks in the monument were first pointed out by the Foreman of Works to the Cathedral body and had been remedied. It was not apprehended that there would be any difficulty in strengthening the monument so that, while not altering its appearance in any way, it would carry the statue.

The Manchester Education Committee and the Architectural Profession.

36 Spring Gardens, Manchester : 8th April 1909.

By direction of the Council of the Manchester Society of Architects the following letter has been addressed to the editors of the local press :—

SIR,—The Manchester Corporation has for some years past maintained a Drawing Office in connection with the Education Committee, in which all designs for new School Buildings, and for alterations to existing buildings, have been and are prepared. Thus architects practising in Manchester are excluded from this work, and in the case of alterations the original architect may see his work copied or reproduced without any acknowledgment by the Committee. Surely a Corporation is not justified in setting up a department to do the work of an established profession unless it can show clearly that the public will be thereby better served.

The Education Committee has had ample time to prove that its Architectural Department either does or does not justify its existence. Can the Committee point to any superiority either in planning or in architectural treatment; while, as to cost, if the Committee will state the average cost per scholar of the new buildings and will make a full return of the cost of maintaining its Drawing Office, it is submitted that it would at once be clear that its method does not make for economy.

The Manchester Society of Architects recently sent a protest to the Lord Mayor with reference to the new secondary school about to be erected in Chorlton Street in accordance with the method indicated above, but without result.

This new school was planned by the Education Committee as an extension to the existing schools, which were built a few years ago by well-known Manchester architects.

These existing schools provide good accommodation for secondary education at an actual cost, including some deep and difficult foundations, of £43 per scholar. In the design for the new schools the general detail is copied from the old school, and the estimated cost, as shown by the accepted tenders,

and which may be substantially increased, so far is £53 per head—an increase of about 25 per cent.

Architects have at least the right as ratepayers to demand the same reasonable efficiency and economy in the spending of their money, as would be demanded of them in their practice.—Yours truly,

ARTHUR S. BREWIS, *Secretary*.

Town Planning in Germany.

In view of the expected passing this Session of Mr. Burns's Town Planning Bill, the National Housing Reform Council arranged a visit this Easter of over eighty representatives of municipalities and other bodies who will be concerned in its administration to the cities of Cologne, Düsseldorf, Frankfurt, and Wiesbaden, with the idea of getting some hints which would assist them in carrying out the proposed measure. Each of the four cities visited has formulated its own way of dealing with the problem and offers a different point of view. We quote from *The Times* of last Thursday extracts from an article headed "The Science of Town Planning," which discusses the town-development problem in Germany:—

The industrial development of German towns has presented an acute problem for the city fathers to solve; and, unfettered by Local Government Board regulations, they have gone to great lengths to encourage the building of houses for the working-classes, and they have taken advantage of the best architectural knowledge in securing that the rapid expansion of their towns shall not proceed on the terribly haphazard lines which characterised the growth of English towns during the industrial revolution of the last century. Town-planning has become an art to which the best minds are bent, and the beautifying of cities is one of the great aims of the municipalities. Spacious streets with three, four, five, or even six rows of trees are to be met with not infrequently; and instead of the trees being planted merely by the footpath, it is usual in the newer thoroughfares to find them arranged in the middle, with a roadway on either side, one being given up to the double row of tram lines. Beneath the shade of the trees will be one or two broad footpaths, a cycle track, a special road for horsemen, and sometimes a track is set aside for motorists—a revelation of arrangement to the visitor who sees these things for the first time.

Assuredly we have much to learn from these students of the problem of the town—a problem which faces every civilised nation to-day; and we shall do well if, in addition to admiring the effect which has been produced, we study well the mistakes which have been made. For mistakes have been made, and are still being made, in the development of these German towns. Not one of the systems adopted could be appropriated and applied to our own manufacturing centres. In no place can it be said that this or that system will fit a town's needs; only the diligent study of all, and the application of what is most suitable, can secure that British towns shall be extended on proper lines which shall combine all the essentials. It was well said, at one of the official receptions given to the party, that the best architect is not too good for this work. . . .

In the hands of the architect of the street plan lies to a great extent the character of the city's growth; whether it shall be prosaic, formless, a thing of rota and formula, or whether it shall be the expression of its citizens' aspirations, an embodiment of its best traditions. Foresight and prudence must make a harmonious blend, and while the needs of coming generations must be studied, the pockets of the present ratepayers must have consideration. . . .

In connection with the English Town Planning Bill, it appears to have been taken for granted that the only people who will object are the landowners. This is not found to be the case in Germany. The landowners there know that the planning of the district is the best thing that can happen for them; and instead of waiting for the municipality to come along and schedule their property, they frequently combine to petition for roads to be planned and laid out, themselves paying the cost. The whole of the land is dealt with as one property, and when the roads are made it is parcelled out in proportion to the various holdings. . . .

What most impresses the visitor to Germany is the universal tidiness. There are no unsightly boardings at every turn—special erections, and not a great many of these, are provided by the municipality for the purpose; and instead of the blank walls of buildings proclaiming the virtues of soap or pills, they are oftentimes treated in a simple yet effective manner which adds much to the dignity of a town.

But with all their planning and all their machine-like organisation, the problem of the housing of the poor has yet to be dealt with. "The price we are paying for the finest town-planning in the world is the destruction of the home," declared one of Germany's housing experts, and it certainly seems so. High price of land, high rents, high taxes make it apparently impossible to provide cottages, and so huge tenements go up; and the working man, like everybody else, finds his amusement and recreation not in the home, but in the street and the café. . . .

At the forthcoming Imperial International Exhibition at Shepherd's Bush, galleries have been reserved in the Fine Arts Palace for the exhibition of "first-class works of British, American, and Continental architects." Members of the Institute willing to exhibit drawings are invited to communicate with Mr. C. R. Radclyffe, Hon. Secretary to the Decorative Arts Section, 15 George Street, Hanover Square.

MINUTES. XII.

At the Twelfth General Meeting (Ordinary) of the Session 1908-09, held Monday, 19th April 1909, at 8 p.m.—Present: Mr. Ernest George, *President*, in the Chair; 37 Fellows (including 15 members of the Council), 68 Associates (including 2 members of the Council), and numerous visitors—the Minutes of the Meeting held 29th March [p. 412], were taken as read and signed as correct.

The Hon. Secretary announced the decease of the following Associates:—Charles Thomas Whitley, elected 1870, and Horace Moger, elected 1903.

The decease was also announced, at the age of eighty-seven, of William Candler Reed, *Associate*, elected 1845; and on the motion of the Hon. Secretary, who referred to the advanced age of the late Associate and to his long period of membership, the Meeting resolved that a message expressing the Institute's sympathy and condolence be conveyed to his nearest relatives.

The following Associates, attending for the first time since their election, were formally admitted, viz.:—Noel John Dawson, William Dean, and Frank Dorrington Ward.

A Paper on THE ARCHITECTURAL WORK OF THE LONDON COUNTY COUNCIL, by Mr. W. E. Riley [F.R.B.A., M.Inst.C.E.], Architect of the London County Council, having been read by the author and illustrated by lantern slides, a discussion ensued, and a vote of thanks was passed to Mr. Riley by acclamation.

The Meeting separated at 10.10 p.m.

ARCHITECTURAL SCULPTURE.

By ALBERT H. HODGE.

MR. SPIELMANN, in his lecture on "British Sculptors and their Work,"* went very thoroughly into the subject, and gave us a very favourable impression of the activity of our sculptors, principally in the direction of the isolated groups and figures. My own conviction is that the architectural side of the sculptor's art is the one from which most advancement will come. In these times, when architecture stretches out her hands to the sister art to aid her in the adornment of her buildings, it were indeed to be deplored should the efforts of our sculptors mar those of the architect. At present we recognise no outstanding influence or school in our sculpture: I do not think, indeed, that we have any school, but rather that we have many sculptors giving us various impressions gathered from all masters and schools, each striving for individuality and originality—two qualities not of the greatest importance in an art movement. I feel confident that there is only one real master in sculpture, and that is Architecture. Architecture alone can direct the true course of sculpture. The masters and great schools of all ages owed their success to her direction and tuition. Phidias, Michelangelo, Donatello, the great masters of Assyria and Egypt, the Renaissance, the Gothic, and in our time a few of the works I mention below, may demonstrate my point. The sculptor must get architectural principles into his work. Whether it be a portrait bust or a group which has been successfully carried out, it will be found to owe its success to architectural scale and to relation of its planes and parts, to good style of workmanship and beauty and refinement of detail—being the same qualities which bring success to a façade.

In the Wellington Monument we cannot tell where the architect leaves off and the sculptor begins. Stevens was intensely architectural in everything he did. His sense of bigness and scale, his treatment of planes, are all to be traced to his knowledge of the mother art. We have with us several fine examples of sculpture carried out under the influence of architecture, which show us how much sculpture benefits by the direction of architecture. The figures on St. Paul's Cathedral should be studied by architects and sculptors. They are handled in a big manner; their shapes are architectural; their story is told in stone, not in clay, and is written all over them with a chisel. The western pediment is very fine in design and treatment, and it possesses along with the rest of the figure-work distinct qualities which remind us of the best Greek period. Curiously enough the stone ornament fails to reach the same

high standard; it is too much cut up, it is wanting in breadth, and it lacks the health and bigness always found in the best work. It recalls the work of the wood-carver rather than of the sculptor, and when we consider it along with the sarcophagus of the Wellington monument its failings become apparent. Of this sarcophagus I cannot speak too highly. I would even place it before the figures, it is so grand in manner, architectural, and sculptural. All the great qualities are here, and one of our finest pieces of ornament is the result. The monument to the Great Fire has architectural sculpture on it of a high order. Somerset House has also some very good figure-work and ornament. The pediment to the British Museum is one of our good pieces of sculpture, and shows considerable influence of the Greek work: the Fates and also several of the figures from the eastern pediment of the Parthenon are echoed: the work is big in manner, architectural, and worthy of its position. In the Albert Hall and the Royal College of Art, both by the same hand, we possess two buildings in which the architectural ornament is of the highest order and quite in harmony with the fine architecture; it shows distinctly the influence of Alfred Stevens. I would also mention the pediment on the stables at Buckingham Palace, a most truthful and good piece of work. The Charles in Trafalgar Square I need only mention—we all appreciate its completeness in every way. I understand that the horse and rider are in lead, and, like the Stevens figure for the top of the Wellington Monument, the Charles is inspired from the Donatello at Padua, perhaps not possessing so much display of movement as its great rival the Verrocchio at Venice, but having architectural design and sculptural qualities, also a dignity of pose and a finer application of enrichment than are to be found to the same extent in the Colleoni. The monument to the Crimean heroes in Waterloo Place I look upon as our finest outdoor monument: the soldiers standing in their simple dignity, the trophies of guns and swords, and the architectural bigness about the whole design, convey an impression truly monumental and worthy to commemorate the deeds of heroes. The very fine portrait statues on the University Buildings in Burlington Street show us how architectural the portrait statue can be made. These portraits are really great works. The work of the late Mr. Harry Bates on the Institute of Chartered Accountants ranks amongst our finest, and I consider it the most sculptural and the purest in style he has left us. The figures carrying the corner have all the qualities which make architectural sculpture great. At the sides of the door he has given us a fine piece of acanthus, a plant which I fear is getting somewhat rare. There is also on the building a Justice by Mr. Hamo Thornycroft, R.A., architectural and good in every way. Lastly, I would draw attention to the late

* "British Sculpture of To-day" (JOURNAL R.I.B.A., 3 April 1909).

Mr. Armstead's work on the Home Office, and the Albert Memorial, as being in a manner which I think most desirable on our buildings. The works on the Home Office especially are of outstanding merit; their good qualities speak for themselves.

The results of the influences of architecture on sculpture are so apparent in the examples I have spoken of that they should encourage the sculptor to draw closer to architecture. I am convinced that the influence of architecture is the one which our school of sculpture calls for to guide it and purge it of all its mannerisms and keep it on the true path already trodden by great schools of art. When we speak of the Principles of Architecture we refer to the only grammar of art which can help artists in their efforts to make their works truthful and beautiful. Much of the decadent, loose and irregular form, badly proportioned and half-finished sculpture we sometimes see is due, I believe, to indifference or to ignorance of the Principles of Architecture. Let us ever keep before us the masterpieces which show the united efforts of the architect and the sculptor. The closer sculpture approaches to architecture the more truthful it becomes, and the more complete will be the attainment of its utmost effects of contrast in form, light, and shade.

THE HORSE GUARDS' PARADE.

By ALFRED W. S. CROSS, M.A. Cantab. [F.].

MR. SPEAIGHT'S suggestion for the improvement of the Horse Guards' Parade and St. James's Park should be carefully studied by his fellow-citizens, to whom, appropriately enough, his scheme is dedicated in the hope that "by its realisation dignity may be added to the capital of the British Empire and a suitable position allocated to the memorials of the soldiers who have fought their country's battles."

Before proceeding to discuss the nature and extent of the proposed alterations to one of the most attractive of London's public gardens, it may not be out of place to briefly describe the various mutations through which St. James's Park has already passed.

Prior to the reign of Henry VIII. the site of this park was a bare, undrained field, belonging to the adjoining hospital of St. James, which is said to have been in existence, in one form or another, before the Norman Conquest. Having obtained, by exchange for lands in Suffolk, the buildings and their immediate surroundings, Henry VIII. proceeded, in the year of his marriage to his second wife, Anne Boleyn, to convert them into what Holinshed describes as "a fair mansion and park." Although St. James's Palace was seldom used by the King during the latter years of his reign, yet it became the favourite residence of his daughter Mary, who died there on 17th November 1558.

Settled on Prince Henry in 1610, the palace passed, on the death of that Prince two years later, to his brother Charles, who, after his accession to the throne, frequently resided at St. James's, and it became the birthplace of his children Charles II., James II., and the Princess Elizabeth. But, as Mrs. Evelyn Cecil states (*London Parks and Gardens*), the most brilliant days of this beautiful park began in Charles II.'s reign (with whose private life it is especially associated), when, after being entirely remodelled and replanted by that King shortly after his return from exile, it was first thrown open to the public. Imbued, as he would necessarily become after his long residence abroad, with proclivities for foreign art and foreign fashions, Charles employed French designers and gardeners to beautify and transform the park and bring it into accord with his, thus acquired, predilection for exotic landscape gardening. The main feature of what Pepys called "the brave alterations" then made, was a straight canal, 2800 feet long and 100 feet wide, which, commencing at the north end of Rosamund's Pond (the "Rosamund's Lake" of Pope, Otway, Congreve, Colley Cibber, and many other authors), ran through the centre of the park, and was bordered on either bank by broad regular avenues of elms and limes, such as those known as the "Green Walk," the "Long Lime Walk," and the "Close" or "Jacobite Walk."

Whitehall, a vast array of buildings, occupied the east end of the park, and the wide open space beyond (adjoining the park front of the present Horse Guards) formed the tilt-yard of the palace. Birdage Walk (where an aviary was first erected by James I.) then, as now, formed the southern boundary of the gardens, and, in the time of Charles II., who had a passion for birds, it was lined with cages placed under the control of the "Keeper of the King's Birds." The Mall (specially laid out for the game of *Palle Malle*) was removed from the other side of St. James's Palace to its present position adjoining the gardens of Marlborough House and Carlton House Terrace, and became for many years the most fashionable promenade in London. Pepys often resorted to St. James's Park to gaze at the "great variety of fowle" which he had never seen before, and here Charles II. increased his popularity by visiting the gardens unattended to amuse himself by feeding the ducks and chatting with chance acquaintances.

As was the case with Louis XIV.'s magnificent pleasure-grounds at Versailles, St. James's Park became for a time a veritable Zoological Garden, for, writing in February 1664-65, Evelyn records that the park was then "stored with numerous flocks of several sorts of ordinary and extraordinary wilde fowle, breeding about the Decoy" (the duck decoy placed near the present Foreign Office), "which for being neare so gritte a citty, and among so gritte a concourse of souldiers and people, is a singular and diverting thing. There were also deere of

several countries—white, spotted like leopards—antelopes, an elk, red deere, roebucks, staggs, Guinea goates, Arabian sheepe, etc. There were withy-potts or nests for the wilde fowle to lay their eggs in, a little above ye surface of ye water."

Although the pastime soon ceased to be a fashionable one, the erstwhile exiled King and his followers had introduced skating "after the manner of the Hollanders." Pepys, following the Duke of York into St. James's Park on 15th December 1662, complained that "though the ice was broken and dangerous, yet the Prince would slide upon his skates." Again Swift, writing to Stella in 1711, speaks of the Canal and Rosamund's Pond being "full of rabble sliding with skaitts if you know what it is."

In 1827-29 the park was again remodelled, as its straight canal and regular avenues were no longer fashionable. The alterations then carried out appear to have met with general approval, for whilst a contemporary writer described the result as being "the best obliteration of avenues that has been effected," and added that "the improvements involved a tremendous destruction of fine elms," yet he was lost in admiration of the astonishing ingenuity which "converted a Dutch canal into a fine flowing river with incurved banks terminated at one end by a planted island and at the other by a peninsula."

The building known as the Horse Guards (so called from the cavalry troop constantly stationed there) occupies the site of the old guard-house erected in 1641 for the accommodation of the Gentlemen-Pensioners (there being at that time no standing Army) who formed the Royal Bodyguard. Designed by Kent, and completed by his pupil and assistant, John Vardy, in 1758, its large central archway, flanked by posterns for pedestrians, forms the Royal entrance from Whitehall to St. James's Park, and leads to the ancient tilt-yard, now the parade ground, the adornment of which is the *fons et origo* of the improvement scheme under discussion. But let me quote Mr. Speaight's own words—viz.:

"On looking down the steps (from the base of the Duke of York's Column) to the Horse Guards' Parade the idea of the improvement I am here venturing to suggest came upon me with startling suddenness. I saw, practically, the whole scheme before my eyes—the wonderful vista from the steps on which I stood, one of the features of the improvement, terminating with the massive tower of the Foreign Office; the canal walk extending from the apsidal termination of the Parade to Marlborough Gate, having on either side statuary commemorative of famous military characters in the early history of England, with the Achilles Statue at its eastern end, and the Horse Guards' Parade, itself converted from its present shapeless form into a magnificent *Place* of quiet and dignified design, depending for its ornamentation on the statues erected therein to the memory of military heroes of our own times."

The improvements, thus visualised by the originator of the scheme, have been very ably brought into

practical form by Mr. C. E. Mallows, whose masterly architectural treatment of his colleague's suggestions will, doubtless, receive the cordial approval of his brother architects.

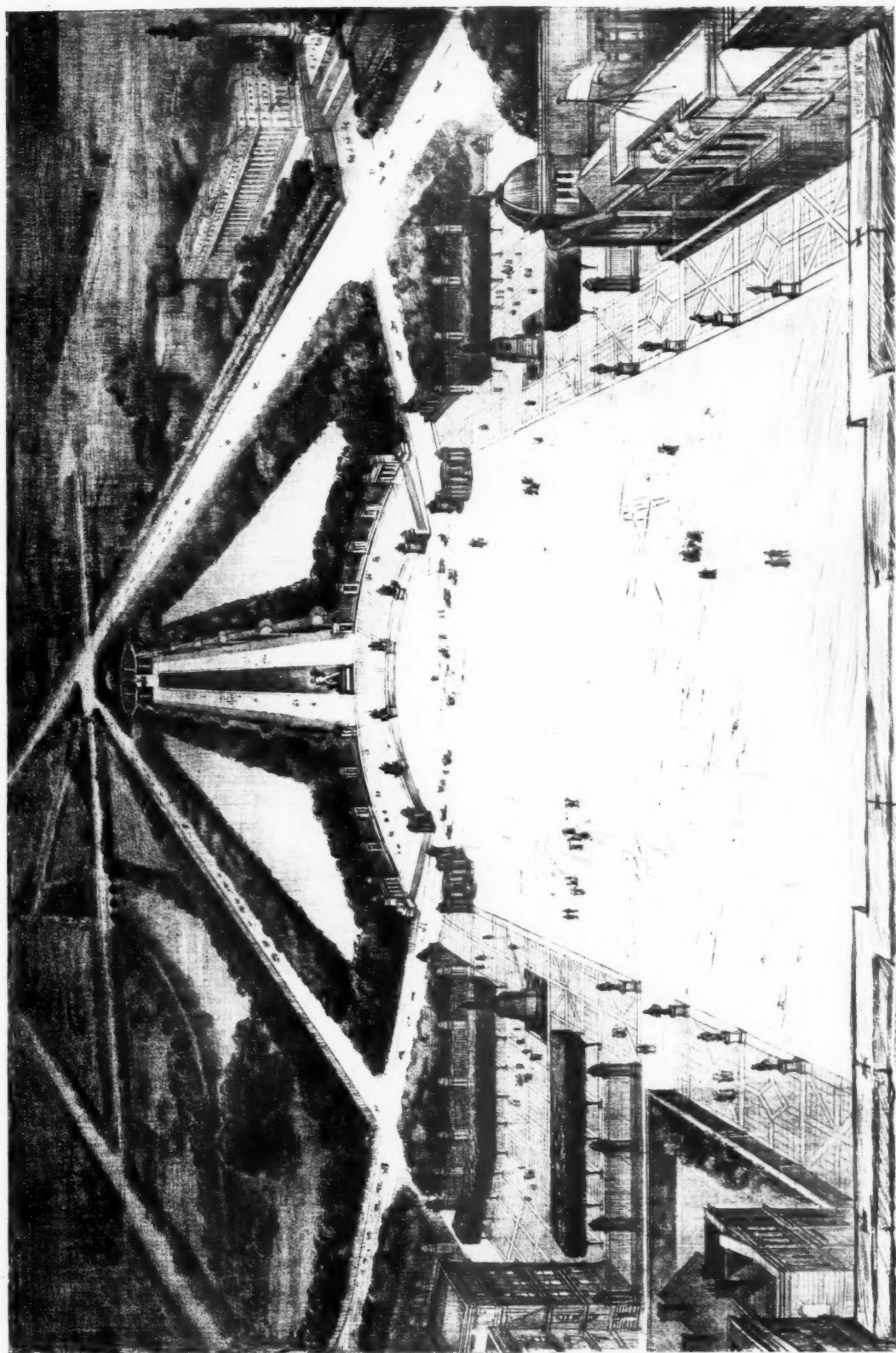
The dominant idea, as expressed in the accompanying ground plan,* is the formation of a huge open space, cruciform in shape, bounded by broad paved terraces (including a large apse-like termination 100 feet wide raised some five feet above the ground), designed to accommodate an immense number of spectators, and to conceal the irregularity, now so painfully apparent, in the outline of the Parade ground itself. The principal features of Mr. Mallows's dignified and monumental "setting out" are emphasised by three main axial lines, of which the central one coincides with the centre of the Horse Guards, and the subordinate ones with the centres of two new radiating avenues placed at the junctions of the semi-circular and straight boundaries of the Parade. Planned to afford the most effective setting to the various groups of statuary with which it is proposed to adorn the *Place*, the ground, which could be thus enclosed at a comparatively small cost, would form one of the largest open city spaces in Europe, and the area available for the purpose of military displays would be at least one-third larger than at present. Isolated, as it would be, from main thoroughfares, and, at least comparatively, free from the disturbing influence of street traffic, Mr. Speaight considers that the new Parade ground would offer unique facilities for the quiet examination and enjoyment of the sculptors' work, which is now so indiscriminately and disadvantageously scattered about the streets and thoroughfares of the Metropolis.

With this idea in view, it is suggested that the Achilles Monument should be removed from its present position in Hyde Park and become the central feature of the apsidal termination of the improved Parade ground. It is also proposed to place the Crimean Memorial (now in Waterloo Place) and the South African Memorial (originally intended for the adornment of the Mall) on the Parade ground in positions which would enable them to become focal points of historic and artistic interest to spectators approaching the park by the new avenues leading to Storey's Gate and the Duke of York's Column respectively.

Smaller statues and equestrian groups assist in defining the cruciform outline of the *Place*, and a canal, 500 feet long and forty feet wide, forms one of the many attractions of the scheme.

Placed on the main central axial line (extending beyond the circular termination of the Parade ground to the new park entrance at Marlborough Gate), and thus, approximately, occupying the position of the former one, the canal would be separated, on either bank, from the park beyond by broad straight walks bounded by high clipped hedges con-

* The plan and the other illustration here given are printed from blocks kindly lent by Mr. Speaight.



THE HORSE GUARDS' PARADE.

A Bird's-eye View showing how it would appear if the suggested Improvement were carried out.

taining semi-circular recesses or alcoves. Statues commemorative of Britain's military heroes, from the time of King Alfred to Sir John Moore, and arranged after the manner of those that adorn the Siegesallee at Berlin, would be erected in alcoves to illustrate historic and epoch-making periods in the history of the British Army.

Finally, the suggested magnificent new avenue from the India Office to Marlborough Gate brings the whole scheme into perfect harmony with the alterations recently effected in connection with the Queen Victoria Memorial, to which, if realised, it would form an admirably artistic, attractive, and useful complement.

The Times of last Thursday published the following letter from Mr. Eustace Balfour, F.S.A. [F.] on the subject of Mr. Speaight's proposals:—

SIR,—I had hoped that before this some critic would have endeavoured to guide public judgment as to the nature of the proposals which Mr. Speaight has put forward for extensive alterations near the Horse Guards Parade, St. James's Park, and the Mall. Such proposals are always interesting, and, so long as they remain in the academic stage, harmless. Indeed, a more careful study of some of the designs that have been recorded for the adornment of the metropolis would prove of advantage to amateur architects.

In considering any important change in town planning, the designer has first of all to take into account existing architectural features. If such exist of value, their artistic preservation is of primary importance. If none exist of value, greater freedom may be allowed.

Examples of these types of alterations may be found recently in our immediate surroundings. The Marble Arch alteration may or may not be an improvement, but at any rate it cannot be said to have injured any neighbouring architecture, for the reason that there is no neighbouring architecture to injure. Of what will ultimately happen on the north side of Oxford Street and Bayswater Road I can form no guess; but with respect to the corner blocks on the east side of Park Lane and at the south of Oxford Street, care will no doubt be taken to adapt any new designs to the altered situation. Here is a case where the change of surroundings follows the attempted improvement.

Casting our eye further south, we come across what I may term the Hyde Park Corner disaster. The triple archway and screen separating Piccadilly and Hyde Park is in itself elegant and refined. It is also placed in alignment to its surroundings without dominating them. But the Constitution Hill arch, once symmetrically disposed, is now placed at an angle which can only be described by the slang word "cockeye." It fits with nothing, it aligns with nothing, and its own fine proportions are destroyed by its strange situation. Incidentally, one of the results of this so-called improvement has been to make the neighbouring streets the most dangerous in Europe for vehicular and pedestrian traffic alike. All this is the more to be regretted because Sir John Soane, the architect of the Bank of England, designed a magnificent scheme for dealing with this site.

Passing further we come to the recent changes at Buckingham Palace. I do not propose to express an opinion upon these, except in relation to the Palace itself. Every one must feel that these new works show

the east façade of the Palace as even more insignificant than it appeared before. It is not usually known that this portion of Old Buckingham House, which is the only part that the public can see, was "run up on the cheap" to meet an emergency. It is difficult to know which to condemn most, its design, its material, or its insignificance. I, therefore, for one (without venturing a criticism), welcome these new adornments, great as is their scale. For I look forward to the time when public opinion will feel that it is a loyal necessity to rebuild the east front of the Palace, with large extending wings, in a style and on a scale suitable at once to its site and to its use.

Coming now to the Horse Guards Parade, we find a different relation between the proposed decorative surroundings and the existing architecture. The Horse Guards building itself, designed by Kent, is, of its kind, an architectural gem. In size and scale it is very small. It is altogether devoid of ornament. This gem-like quality is therefore produced entirely by reticence and proportion. Thus, whatever is done in its neighbourhood should be done in subordination to these unique qualities. Happily the buildings immediately contiguous to the Parade front are equally small in scale, one of them near by having indeed been designed by Kent himself.

Now if we look at these proportions we find that the height to the springing of the triple arch on the ground floor is 8 feet, and to the course marking the first floor level externally 16 feet 3 inches. Any casual spectator may get a good idea of the value of these proportions by observing either the mounted or the unmounted sentries on guard. To this relation between the human figure and architectural feature great importance must be attached.

I have always preached the doctrine that sculpture and architecture are sister arts, united by the closest ties. But in order that these bonds should be carried by each in harmony, it is clearly essential that there should be a relative proportion between the two. No one would propose to put a Colossus of Rhodes or a Bartholdi statue of Liberty astride the dome of St. Paul's. But, if I judge him aright, Mr. Speaight is proposing to use military statues on such a scale that they would be on a level to look in through the windows of the Horse Guards Levée Room. Such sculpture, however perfect in itself, would absolutely dwarf the proportions of Kent's design.

There are many other matters of detail to which I might refer. I will, however, confine myself at the moment to the proposed canal. In reference to this he states, underneath a reproduction of an engraving of the original piece of water sometimes said to be laid out by Le Nôtre, that his proposal occupies the same site as that attributed to the great Frenchman. As a matter of fact the two pieces of water are far apart. The old canal ran from about where the peninsula is now to near the front of Buckingham House. In fact, it occupied the site of the present sheet of water, but was rectangular in shape. The proposed canal, which is only of the tiny dimension of 40 feet in width, runs (taking the levels) up hill to near some point not far from the south-west corner of Marlborough House Garden. On each side of the canal it is proposed to put, in little recesses, the statues of military heroes, looking for all the world like workmen taking refuge in a retaining wall from a passing train.—I am, Sir, your obedient servant.

EUSTACE BALFOUR, F.S.A. [F.].

